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FOR THE DRILLING, PRODUCING, REFINING AND PIPE LINE INDUSTRY

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LOOKING AHEAD
... with the Editor

THE bituminous sands of Alberta province in Canada have long been challenging to oil-minded individuals. The fact that these deposits are high in hydrocarbon content has tempted several individuals to utilize them commercially, and experiments have been made in the hope of effecting some process to extract the oil profitably. Up to this time, none of these experiments have been successful.

The sand deposits are to be found in the northern part of the province in the region of the Athabaska River. Actual extent of the sands is not known with much certainty, since they are buried under many hundreds of feet of overburden in much of the area.

The part of the area under attention just now lies along the Athabaska River for about 65 miles, northward from McMurray, or Waterways which is three miles from McMurray. River transportation by shallow-draft boats extends from Waterways northward through the bituminous sand area.

A test program being put into effect now by the Research Council of Alberta will try to produce oil from the sands by excavating the deposits and then washing the oil out of the sand with water.

K. A. Clark, research engineer for the Council, will review the project in an early issue, along with an interesting historical account of the sands including some of the efforts to exploit them in the past.

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Contents . July 23, 1945
Volume 118, No. 8

The Changing Panorama 35

Technical and Feature Articles:

Good Housekeeping on the Oil Lease 36
By Ogden S. Jones

Bombers Over Japan 40
By Don L. Carroll

The Rule of Reason 42
By Ernest O. Thompson

Casinghead Gas Accounting 43
By K. R. Tibbets

Wyoming 46
By Pierre LaFleiche

Production Hints 52

News and Departments:

Looking Ahead 33
The Outlook 55
The Week's News 57
Market Trends 65
Pipe Line News 66
International News 68
Field Operations 69
Exploratory Completions 85
Wildcat Starts 86
Squeaks from the Bull Wheel 89
Men in the Industry News 90
Book Review 92
New Equipment, Literature 93
Index to Advertisers 96

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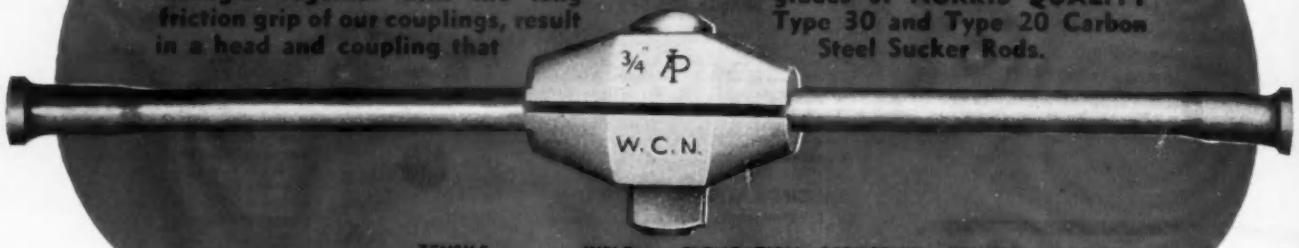

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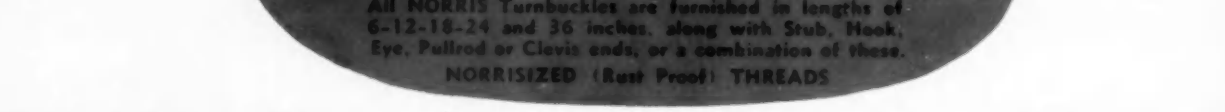

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The Changing Panorama

Ray of Hope For "Little" Business

A FIVE-POINT program tax relief program has been recommended by the Joint Committee on Internal Revenue Taxation for Postwar Taxation, to be put into effect as soon as proper legislation can be drafted. The "little" business enterprises including the small independent natural gas and oil producing company may benefit from the proposed measure. Specifically recommended by the committee are these proposals:

Increase the excess-profits tax specific exemption from the present $10,000 to $25,000, effective with the year, 1946.

Provide that the postwar credit of 10 percent of the excess-profits tax be taken currently with respect to tax liabilities of 1944 and subsequent years.

Advance to January 1, 1946, the maturity date of outstanding postwar refund excess-profits tax bonds.

Speed-up refunds resulting from carry-backs of net operating losses and of unused excess-profit credits.

Speed-up refunds resulting from the recomputation of deductions for amortization of emergency facilities.

The program which the committee recommends be put into effect for the period until the end of the Japanese war, has the approval of President Truman, Treasury Department heads, and the chairmen of the House and Senate Tax Committees.

Solve Labor Troubles

CHAIRMAN George W. Taylor of the National War Labor Board, speaking recently before the American Management Association, in New York, offered a bit of advice that ought to sink deeply in our thinking. Talking on collective bargaining and the purpose of the WLB, he said: "In my opinion, management and labor are not fully utilizing their wartime collective bargaining rights, and are restricting their action far beyond the limitations imposed by governmental restrictions. Actually, employers and unions need come to the WLB only with proposed wage adjustments.—The more they turn to government to handle their collective bargaining relationships, the less able they will be later to handle the job themselves."

The more we depend on government, the more directives, regulations, orders, and interference we can expect. What Chairman Taylor says about the WLB applies to all other governmental agencies. If we refuse, through laziness or indifference, to try to work out our problems, we can count on the socialistic minded people in government to try to work them out through directives. It is up to us whether we permit continuance of this trend after the war, or throw it out.

More Oils at a Lower Cost Help Promote Industry Employment Plan

MEN of the oil industry, independents as well as large company men, traditionally are wary of moves toward government control or government ownership in industry. Therefore, they have misgivings regarding all the current talk of government-made "full employment" after the war. Some instinctively fear the proposals as jeopardizing free enterprise and as the beginning of socialism and regimentation.

However, the oilman who hopes to preserve free enterprise in his industry and industry in general cannot afford to dismiss the "full employment" idea with an instinctive absolute rejection. For under the influence of war, postwar "full employment" as a social and economic objective has gained powerful popular support, not only in this country but also in other countries. So strong is the popular sentiment for the general idea in Britain that the present coalition government, reflecting views of all political parties, has gone on record approving the primary objective. In voting for a motion welcoming the broad objective, members of the House of Commons doubtless were mindful of the implications of the statement of Labor Minister Sir William Beveridge: "I am convinced that . . . any party which faced the people of this country at a general election and refused to accept the principle of full employment would not be returned to this House."

In the United States last year in the presidential election both the Democratic and Republican parties promised, in effect, "full employment" after the war, and it may be taken for granted that something toward that end will be attempted.

As a matter of fact, oilmen and other businessmen generally would wholeheartedly welcome "full employment" because it would mean prosperity. Their opposition is not to be objective but to the idea of seeking to attain it primarily through political action, at the expense of private initiative.

All things considered, it would seem the wise and effective course of oilmen and other businessmen to not only accept but also endorse the admittedly desirable general objective, as American and British lawmakers have done, thereupon to make their voices heard as to how the goal is to be approached.

In fact, some leaders in the oil industry are giving serious thought to this important matter. One oil company executive recently made an address in which he declared that oil companies will benefit themselves as well as the public by striving for large volume of business as the determining factor in assuring satisfactory financial results. Large volume at lower price may afford more profit, he indicated, than less volume at higher price. In effect, the industry has long operated on this principle of providing more oils at lower prices, but this practice might well be publicized more as a perennial contribution of the industry not only toward maximum employment but also toward maximum real income or consumption, which is the final true objective beyond the technical objective of maximum employment.

Over the years the industry has become increasingly efficient in its operations, and has become able to provide more oils with a given number of workers. Its possibilities for providing more jobs have been therefore in promoting greater and greater use of its products, and in this way it actually has enlisted more and more workers. In the future, likewise, it can best contribute toward employment by promoting increased demand for its products, and the best method heretofore found for stimulating consumption has been by constantly striving to lower the cost.

The oil industry's own program for promoting "full employment" insofar as it is concerned itself may well be fashioned therefore around its tried and familiar policy of providing more oils at lower cost. This guiding technique is in fact the essence of the private, competitive, enterprise system, and private enterprise in general holds the key to maximum employment, for which men of government now are seeking. The best that government can do is to see to it that the most favorable conditions are assured under which private enterprise can provide employment.

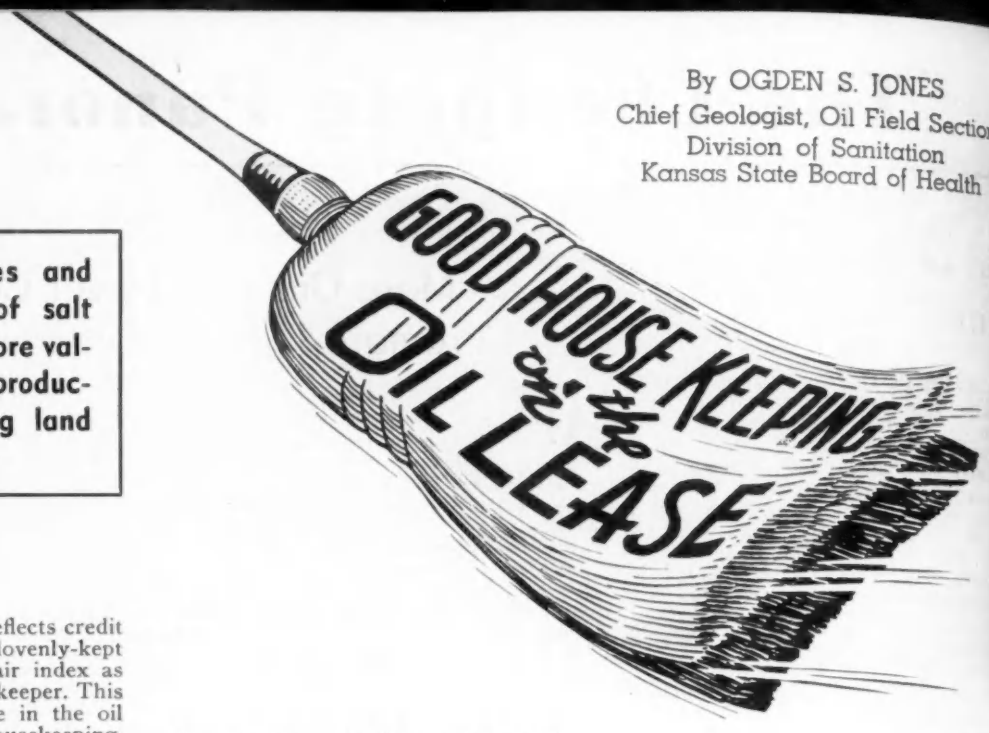
Happy Anniversary

"UNREST in the Middle East, the actual warfare which broke out in Syria," says Russell B. Brown, of the IPAA, "and the threat of more to come suggest a new type of anniversary. On February 6, 1944, Secretary Ickes announced that a government pipe line would be laid across Saudi Arabia. Had the plan been carried out, we would most surely be a military intervenor in that part of the world. The proposal was not realized. Perhaps the date should be observed; once a month is none too often to give thanks."

It is fortunate that this country has not been obliged to force itself into a situation that appears too complicated already.

I have found the Army very much like business in one respect. The competent people get ahead, and the incompetent ones get dissatisfied.

—A Soldier,
"Somewhere in Germany."



By OGDEN S. JONES
Chief Geologist, Oil Field Section
Division of Sanitation
Kansas State Board of Health

Well-kept premises and efficient disposal of salt water make lease more valuable and add to productivity of surrounding land and streams

A WELL-KEPT house reflects credit on the housekeeper. A slovenly-kept house is in most cases a fair index as to the character of the housekeeper. This same comparison holds true in the oil fields in the matter of lease housekeeping.

A neat, well-kept lease inspires respect and confidence in the company and oil field personnel who insist upon neatness on the lease premises. Adversely, an ill-kept, dirty, oil-covered lease creates the opposite feeling. For instance, a prospective investor would not be favorably impressed if he were taken onto a lease cluttered with oil spills, broken equipment and leaky tanks.

Some leases take money, time, and effort to place presentable shape; but once done, it is fairly easy and inexpensive to keep them so.

Early Waste

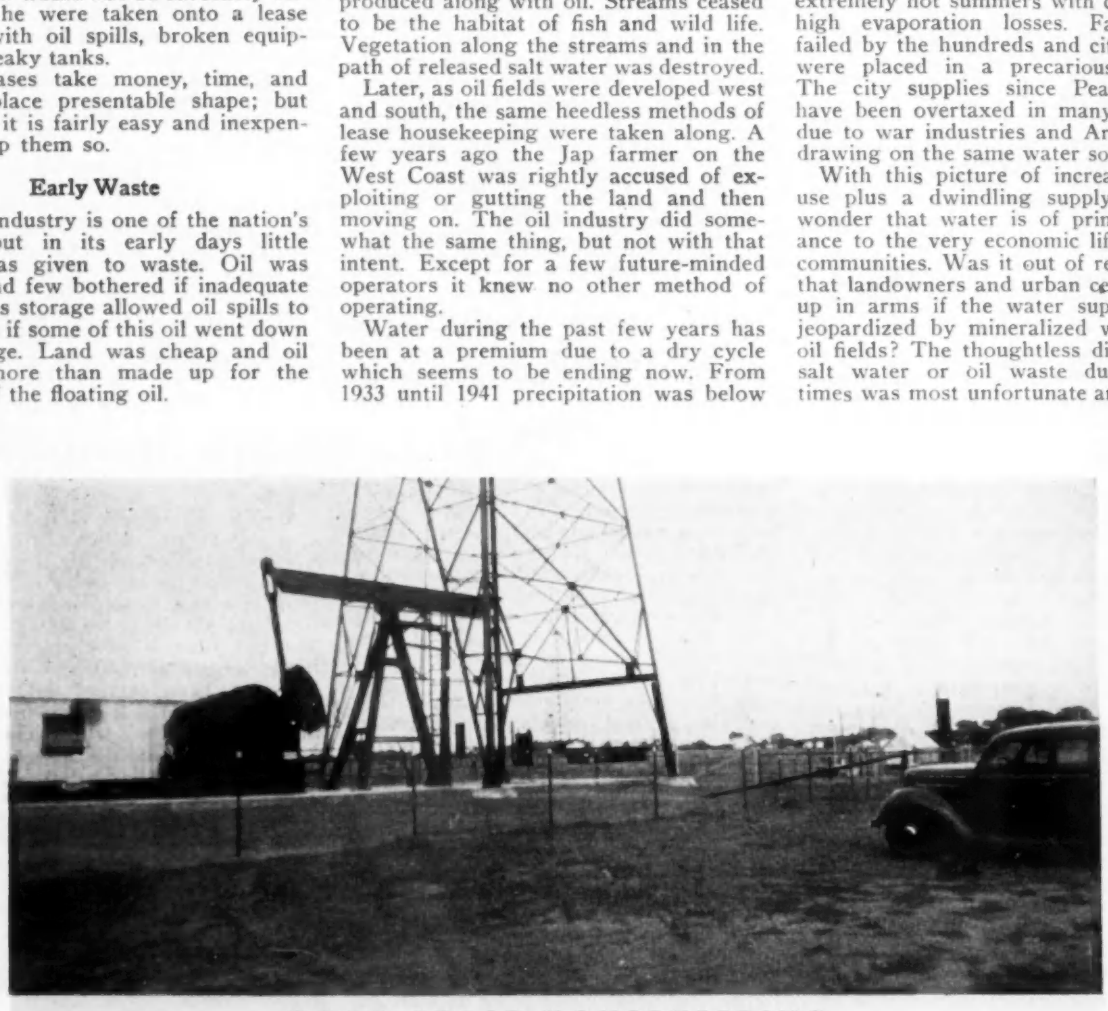
The oil industry is one of the nation's greatest, but in its early days little thought was given to waste. Oil was plentiful and few bothered if inadequate and careless storage allowed oil spills to occur, even if some of this oil went down the drainage. Land was cheap and oil royalties more than made up for the nuisance of the floating oil.

It was not until the royalty checks ceased and the industry moved out that some of the landowners woke up to the fact that the scars of the industry did not add to the value or productivity of land. Numberless fresh water wells had gone salty due to careless handling of water produced along with oil. Streams ceased to be the habitat of fish and wild life. Vegetation along the streams and in the path of released salt water was destroyed.

Later, as oil fields were developed west and south, the same heedless methods of lease housekeeping were taken along. A few years ago the Jap farmer on the West Coast was rightly accused of exploiting or gutting the land and then moving on. The oil industry did somewhat the same thing, but not with that intent. Except for a few future-minded operators it knew no other method of operating.

Water during the past few years has been at a premium due to a dry cycle which seems to be ending now. From 1933 until 1941 precipitation was below normal and coupled with it were several extremely hot summers with consequent high evaporation losses. Farm wells failed by the hundreds and city supplies were placed in a precarious position. The city supplies since Pearl Harbor have been overtaxed in many instances due to war industries and Army camps drawing on the same water source.

With this picture of increased water use plus a dwindling supply, it is no wonder that water is of prime importance to the very economic life of many communities. Was it out of reason then, that landowners and urban centers were up in arms if the water supplies were jeopardized by mineralized water from oil fields? The thoughtless discharge of salt water or oil waste during these times was most unfortunate and brought



GOOD LEASE HOUSEKEEPING

OIL GOING INTO DRAINAGE

much adverse comment and considerable litigation to the oil industry's doorstep.

Nuisance Laws

Statutes, rules, and regulations, unless carefully set up, can hinder regulatory bodies and be a nuisance to the oil industry. Laws must be basically sound and fair, otherwise they not only place a harsh burden on the industry, but create a feeling of suspicion against state agencies charged with fresh water protection.

The oil companies, however, must face the issue honestly and squarely that these regulations now in force on fresh water protection are the direct result of the careless operations of early operators. Most major companies and many leading independents realize now that they owe it to society to protect and leave intact potable water supplies. Oil is valuable and should not be carelessly spilled; likewise, the salt water raised with the oil should not be allowed to jeopardize fresh water. Salt water disposal is a legitimate part of the lifting cost of the oil. Salt water should be looked on as a form of reservoir energy.

The oil companies, aside from supplying oil to an expanded wartime market, have to make a profit for the stockholders; but at the same time they must and, for the most part, are keeping in mind the obligation to the public in the protection of water supplies. The oil industry for the past few years has evidenced a gratifying spirit of cooperation with the several state agencies having to do with water supply maintenance.

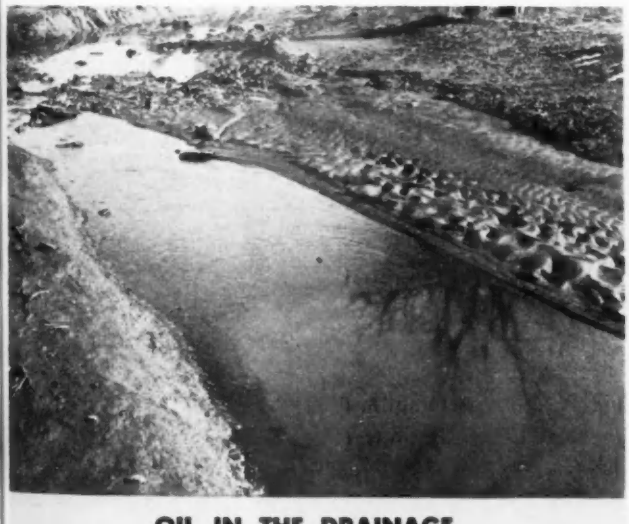
The geologists and field men on the staff of the Oil Field Section, Division of Sanitation, Kansas State Board of Health, have had exceptional opportunities to observe lease housekeeping at its best and worst. We feel, therefore, that their ideas on the subject are worthy of record. The ideas are not claimed to be entirely original, as many of them are based on observed practices already in field use. The modern oil operator is given credit for putting into everyday use most of the excellent practices designed to improve the physical aspects of lease properties. A neat lease is a credit; a sloppy lease is a definite liability.

The writer gratefully acknowledges the ideas and help of our staff members, Willard Hilton, Hal C. Smith, Charles Dalrymple, Jr., and John McFarland, in the preparation of this article. We trust these thoughts on lease housekeeping will be taken as a sincere desire to pass on to the operators the many ways that lease housekeeping can be improved.

Lease Housekeeping

1. *Pumping wells*

On pumping wells the top of the big hole should be filled and cemented around the oil string or casing-head. A space the size of a derrick floor should be graded up to insure good drainage, and covered with concrete with a slight slope to the center, or if to one side,



OIL IN THE DRAINAGE

POND READY TO OVER-TOP. NOTE SEEPAGE.

SEEPAGE FROM POND DIKE

with a small gutter in the concrete to carry off waste oil when the well is being serviced, or from the stuffing box and bleeder when pumping. This gutter should empty into a small pit far enough from the well to be safely burned. The pumping engine should be set on a concrete base and housed in. The engine house should be of steel and could be painted in the company colors. If the drilling derrick is left over the well, it should be painted. Black is suggested for this purpose as the lighter colors will show the oil blown from the lines, rods, or tubing when the well is being serviced. Unless rod hangers are used, there should be a concrete rod walk long enough for a stand of sucker rods. This will prevent the rods from being covered with dirt or sand when run back in the well. A space at lease ten feet all around the derrick grade and engine house should be leveled and kept free from grass and weeds, and lightly sprinkled with waste oil to avoid mud and dust. It will add to the appearance if the pumping beam, pitman, crank and balances are kept painted; and again black is the best color. The derrick floor, walks, and engine house floor should be kept clean. Some of the companies are very scrupulous regarding this last point as a safety factor to personnel. A greasy walk or floor invites accidents.

2. Lead lines

The lead lines should be of noncorrosive material and buried below freezing depth and the ditches leveled. Lead lines from all wells on the lease should be connected to a header (above ground) at the gun-barrel or receiving tank.

3. Tank battery

The tank battery should be placed on a well-settled grade, built high enough to insure plenty of fall for the proper disposal of water and bottom sediment. The gun-barrel or receiving tank should be set at the highest point, with a two or three-inch fall to the first settler or stock tank, and a similar drop to each succeeding tank in turn. Welded steel tanks make the best appearance as they are less likely to leak at the seams. Wooden gun-barrels are usually preferred, and frequently for stock tanks if the water or gas is especially corrosive. Steel tanks should be painted. Black should be used around the thief hatch, and a strip three or four feet in width down that side of the tank should be painted black, as it is almost impossible to avoid some oil dripping when gauging or thiefing the tank. Wooden boxes made of 2 x 12 or 2 x 10-inch pieces, or cement gutters should be installed on the draw-off side of the gun-barrel and tanks for the proper disposal of water.

Around the entire battery there should be a retaining dike or fire wall enclosing an area large enough to contain the entire capacity of the battery in case of fire or breakage. The dikes and area enclosed should be kept free from grass and weeds and sprinkled with oil to keep down the dust. The dike also should have a drainage outlet to handle excessive rainfall, and for this and other reasons, the battery should be set on well-drained ground. Steps of concrete over the dike and steel steps and walks to and on the tanks are desirable. A fence around the battery and dikes improves appearance and saves trouble if livestock is running at large. This fence can be built of posts made from junk line pipe with at least three strands of barbed wire tightly stretched, and the gate can be made of junk sucker rods cut and welded. At the gate to the battery should be an oil drum with one end cut out and kept painted, as a receptacle for the oily rags used by the pumpers and gauger. Later on, these used rags will help in starting a fire in the burn pit.

4. Burn pit

The burn pit should be located so as not to receive any surface drainage, and far enough from the battery as not to constitute a fire hazard. It should have good dikes and be of sufficient size to insure storage between burn periods, and should be kept burned as often as possible so as not to become dangerously full.

5 Salt water disposal

Ponds should not be used if likely to become a menace to the shallow fresh water beds. In any event, they never should be built in a natural draw or in a creek bottom subject to overflow, or in a sandy or otherwise porous soil which will not **hold water.**

In building the dikes it is good practice first to dig a shallow ditch at the base of the dike, and then fill in and pack the soil. Dikes started on the natural top of the ground nearly always seep badly at the contact point. For large ponds, dikes 12 to 20 feet in width at the base are not excessive. A commercial drilling mud, if spread over the bottom of the pond and base of the dikes will help prevent seepage. Evaporation of water from ponds is much less than usually supposed, and this evaporation merely increases the chloride content of the remaining water. Salt water disposal wells are authorized under Kansas laws, and a recent amendment to the statutes grants to the oil producer the right of eminent domain in acquiring the necessary rights-of-way and sites for such wells.

After these wells are once built and the lines laid, they afford a minimum of trouble and expense to the producer, and greatly lessen his liability for damage claims from landowners, municipalities, and others. If what is known as the "open system" is used, the aerating tanks should be of reinforced concrete, so divided that the surface of the water can be kept skimmed of any possible oil or bottom sediment before it goes to the disposal well. The well and other installations should be fenced in with steel posts set in concrete and strung with barbed wire.

6. Lease houses and other structures

Many of the larger companies now provide good homes for their regular lease employes. Sometimes these are built singly on scattered leases, but in cases where they have many leases in a pool, they have a "camp" of perhaps a dozen or more residences.

In the camp are tool-houses and office buildings, garages and outhouses, and frequently they are serviced with a pressure water system. One of these camps with the residences arranged on a "street," well fenced, concrete walks, with a garage and out-house at the back, painted in the company's colors, probably is one of the best investments the company has, as it pays dividends in work and less labor turnover. There also is a well-equipped tool-house where the men gather each morning for instructions and tools.

The pipe yard has well-built concrete and timber racks for casing, tubing, and rods in assorted sizes and weights, and a platform or bin for waste material and junk. Roads to each well and battery should be graded and oiled. Men living in company houses can be encouraged to keep their own premises neat and attractive, and they frequently have lawns and vegetable and flower gardens in which they can take considerable pride.

7. Farm boss or foreman

In a most important position is the man who has direct supervision of the lease, usually the foreman or farm boss. If he has had good training and the backing of his superiors, he will make every effort to keep things clean and safe around his pumping wells and battery. He will see that the roads are kept

in shape and weeds cut. Water and bottom sediment boxes or gutters will be kept free from weeds and grass, dikes in good repair, and bottom sediment burned or put on the lease roads at the proper time.

8. Power plants

Centrally-located power plants sometimes present additional problems in lease housekeeping. They seldom are the source of extensive wastes, but there is always some waste and spills in the care of machinery and this can create a pollution problem over a period of time. Accumulations of junk and discarded or worn-out equipment often make it difficult to take care of whatever spills do occur. Boosters are usually located by the power and may be sources of wastes. Rod lines sometimes cut ditches or cross ponds and make it necessary to have low dikes further complicating the care of them.

9. Abandoned sites

Abandoned tank sites sometimes are left in poor condition with respect to possible pollution. Oil wastes, open pits, and old lines often contain sufficient waste to constitute a pollution hazard in addition to giving the lease a generally bad appearance and handicapping the full utilization of the land. Well sites and power abandonment present the same general type of problem. Grading over these abandoned sites does much to eliminate future trouble.

10. Special problems

On water repressure projects there are sometimes problems in lease housekeeping aside from the complications of additional lines and equipment necessary to operate such a project. The uncontrolled flow from producing wells has been a problem to many operators. In most cases, the problem arises when a well is not pumping and the pressure built up is sufficient to flow the oil from the well.

Oil sometimes flows outside the casing, but more often through the casing. Due to the time required to build up pressure, most operators are reluctant to shut off the injection wells and usually some control of the flow is attempted, such as cementing in the tubing, putting a tight head on the casing, and flowing through the casing if it is not possible to keep the well in condition and pumping.

Floods present additional problems to operators of leases in bottom lands. Usually any wastes that have accumulated are cleaned up on flooded lands, but also there is a tendency to rely upon floods for the care of some wastes and a resulting attitude of carelessness in the care of batteries, ponds, and well sites. Conditions on the lease are often such that adequate care cannot be taken for periods of time and accidents frequently occur during these periods.

Where oil is trucked from a lease, wastes from the coupling and uncoupling of hose connections are usually observed. The amount spilled at any one time is usually small, but recurrence of spilling and draining of tank hose sometimes creates unsightly conditions in roadside ditches, and at times pollute streams.

11. Drilling in artesian areas

Unless extreme care is taken in well completions in areas of mineralized artesian flow, pollution of surface and shallow fresh waters will follow. Casing practices and cementing must be designed to give all time protection in such areas. Likewise, the plugging of abandoned wells must be accomplished in such a manner as not to allow bypassing or channeling by the plug set to protect upper waters.

Most operators now set the surface pipe below all known fresh waters and cement it in from top to bottom as a means of fresh water protection.

Litigation nearly always follows unless the best operating practices are followed in these areas of artesian, mineralized flow.

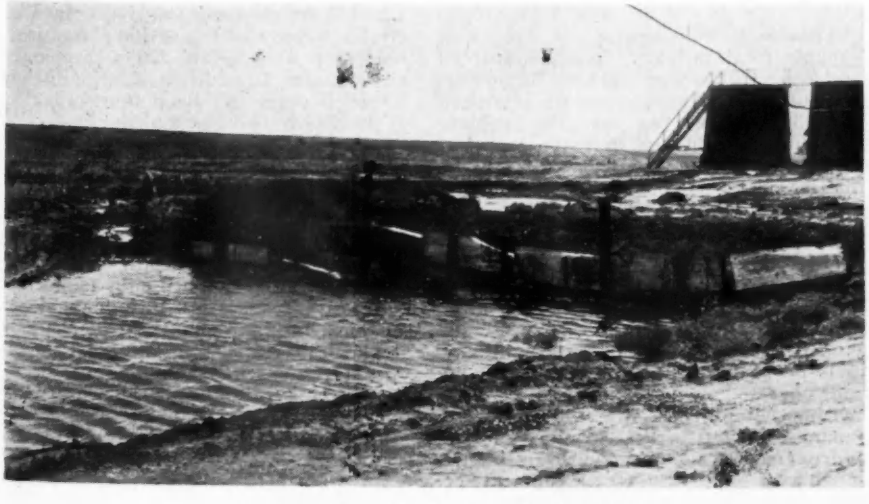
VEGETATION SUFFERS FROM OIL AND SALT WATER

12. Pipe line breaks

Pipe line breaks are not only a source of stream pollution, but a serious break entails considerable financial loss to the oil company. Some breaks are excusable if they occur by some act of nature over and beyond man-made safeguards. However, most of the oil spills from small gathering line partings are the result of careless operating practices. Gathering and feed lines either should be securely anchored or buried if crossing a stream bed, or they should be carried over the stream out of the way of floods and freshets.

Oil spills or breaks in a large pipe line at a major river crossing causes trouble for all downstream water users. When the break is first noticed the pumps should be cut and valves between the pump and break shut down. Next, a clean-up crew should get on the job at once. The oil should be diked off for later recovery or burning. A boom can be thrown across the stream to catch the oil on the water surface. This boom should be so located as not to create a fire hazard to timber or wooden bridges.

A portable weed burner is very handy in cleaning up oil spills; the intense nozzle heat will set fire to most oil even though the spill occurred some time before.



MAKESHIFT SALT WATER POND

Conclusion

We feel that the modern technical school in the training programs set up for oil field personnel should make it clear that clean leases are a definite asset and that dirty leases are a decided liability. This point also should be stressed in the company schools conducted for oil field workers. Officials in the policy-determining branch of the oil company must realize that adverse criticism brought about by pollution litigation is not good advertising. Good will has a dollar and cents value and it can be enhanced by keeping oil properties clean and orderly.

It will be further enhanced by making sure that the mineralized water produced with the oil is so handled as not to constitute a threat to the fresh water which is a ranking natural resource.

Bombers Over Japan

Early obliteration of Nippon's oil supply is promised by increasingly heavy attacks from air

By DON L. CARROLL, Foreign Editor

THE fact that Germany literally "ran out of gas" early in 1945 is given by both sides as the principal factor in bringing on her ensuing quick and utter defeat. No single Allied bombing campaign was so completely devastating in its effect as the continuous attack on Germany's oil supply facilities, begun on an intensive scale in the summer of 1944 and carried on up to the end of hostilities. A month before V-E day there was not a single crude refinery or synthetic oil plant in Germany that was capable of being operated at more than 5 percent of its original capacity.

That the Japanese oil industry is slated for the same kind of concentrated bombing attention is an absolute certainty. The recent announcement by General Arnold that 2 million tons of bombs will be rained on Japanese home industries within the next year, by Army bombers alone, indicates the scale of the attack will greatly exceed the plastering administered to German industrial centers. Supplementary attacks by carrier-based Navy planes will hasten the industrial ruin accordingly.

As for the job to be done in cancelling out Japan's refineries, synthetic fuel plants, strategic storage depots, etc., enough is known about their locations and relative importance in the Japanese war program so that the probable schedule of their individual priorities as targets can be "guestimated" with some degree of certainty.

Load on Home Industry

In the first place, Japan has now lost by recapture or effective blockade approximately 90 percent of the crude oil production available to her from early 1942 through 1944 from Burma and the East Indies. This was probably as much as 25 million barrels during the peak twelve month period. She has also lost her 2 million-barrel-per-year take from the Russian fields in northern Sakhalin. Since no export oil is available to her, the entire liquid fuel and lubricant supply load is now being borne by her home industries, including those in Korea and Manchukuo.

It may thus be supposed that the Japanese are hard pressed for natural and synthetic fuel supplies, and that the bombing out of a few plants and storage depots will immobilize her fleet, air force and army transport. Unfortunately, this is not the case—not by any means. Even if the Japs had obtained no oil at all from Burma and the Indies, the nation's stocks in storage, plus output from domestic plants, are believed to have been sufficient to meet her military and industrial needs for a 10-year war, if need be.

Between 1934 and December of 1941 Japan's stocks of crude oil and refined products in storage were built up to some 200 million barrels. Oil fields in Honshu, Hokkaido and Manchukuo have undoubtedly been yielding at the rate of at least 4 million barrels per year during the war period; while shale oil production is believed to have been boosted to more than 6 million barrels per year in mid-1944. In addition, Japanese coal hydrogenation plants, for more than a year now, have been producing at a rate of about a million barrels of gasoline and heavy oils per month, and both low and high pressure gas synthesis plants in Japan are turning out more than 9 million barrels of similar products yearly.

Therefore, considering the fact that Japan's total military, naval, industrial and essential civilian wartime liquid fuel and lubricant requirements are less than 50 million barrels per year, the problem of obliterating her oil industry potential for continuation of the war is seen to be one of major proportions.

Rely on Synthetics

It is equally evident that Japan's war plans included recognition of the fact that adequate crude oil supplies might not be forthcoming, and that to retain a position of self-sufficiency a synthetic fuels program would have to be set up and operated on a grand scale. With German equipment and technical aid the Japanese set out in 1937 to erect 23 coal hydrogenation and gas synthesis plants capable of supplying 60 percent of her fuel requirements for war. In addition, two large shale oil processing plants were built to utilize the output of shale retort plants in Manchukuo, so that a total of at least 75 percent of the Japanese liquid fuel needs could be met without reliance on questionable supplies of natural petroleum that might or might not be obtainable outside of Manchukuo, the home islands or emergency storage.

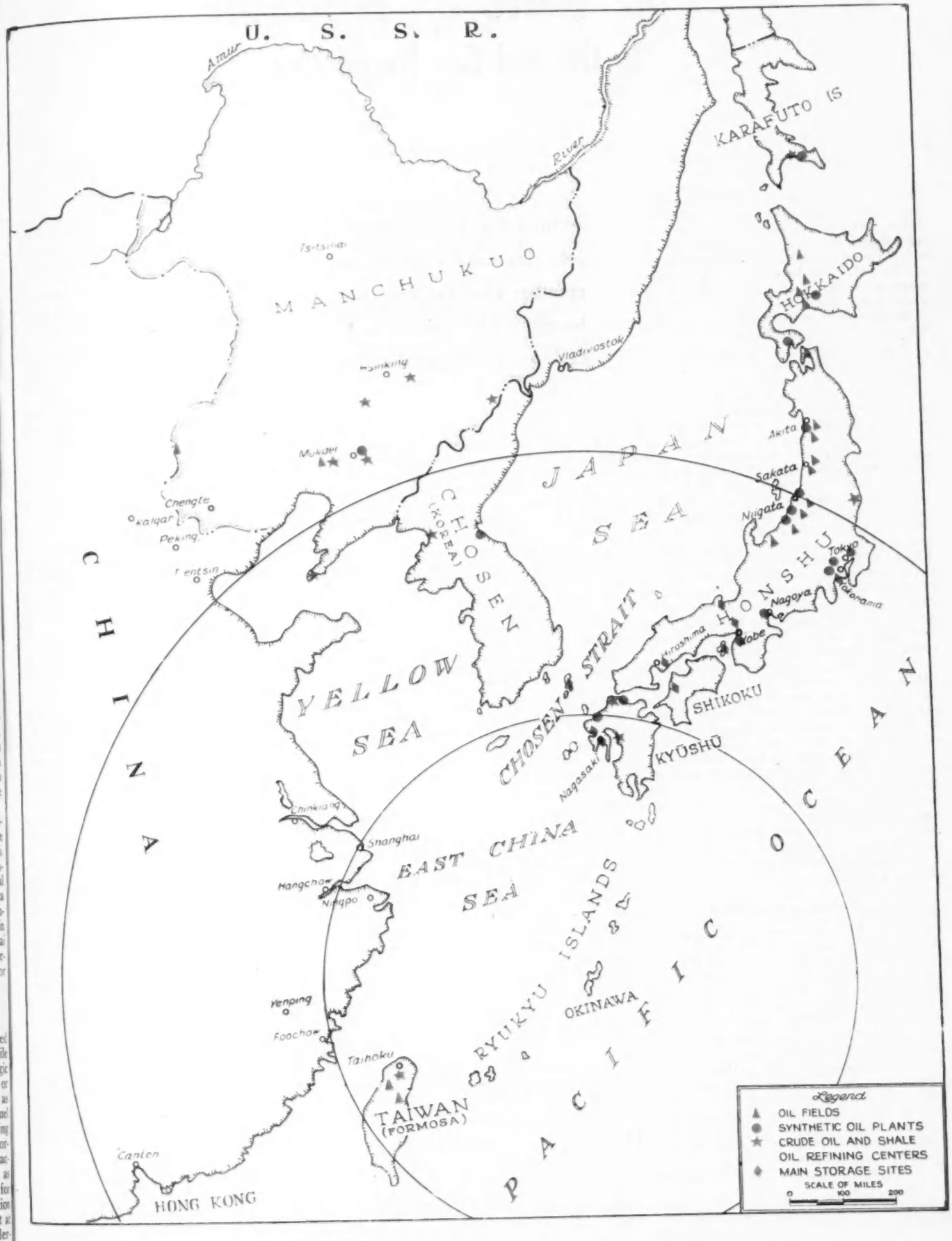
These synthetic plants are therefore the logical targets for the attention of our bombing crews, together with tank storage installations and a certain number of important distribution depots. If all 50 or more of Japan's natural crude oil refineries were permanently destroyed her oil industry would not be seriously crippled at this stage of the war. Furthermore, only ten of these refineries are large enough to be considered as worthwhile military targets, and the largest has a daily throughput run of probably not more than 5000 barrels.

In Japan proper, the largest synthetic fuel plants are concentrated in two main centers, in or near Yawata and Omuta, both on the island of Kyushu. There are 5 of these plants in Manchukuo, 2 in Korea, and at least one at Otomari, in Karafuto (Sakhalin Island). For the most part, they are spotted close to coal mines to reduce to a minimum the transportation of raw material consumed. Probably 90 percent of the home islands synthetic oil industry is concentrated in the Yawata-Omuta area of northwestern Kyushu. Realizing this fact, our air force is bombing these plants repeatedly.

At least 50 percent of Japan's synthetic oil capacity can be assigned to the large plants in Korea and Manchukuo. Two large hydrogenation plants are located near the rail and seaport terminal of Shinanshu, at the head of West Korea Bay, 45 miles north of Heijo. In Manchukuo large hydrogenation plants are in operation at Fushun, Kirin, Szepingkai and Holung. In addition, a large Fischer-Tropsch plant has been functioning for at least two years at Fuhsin.

Storage Depot Targets

As mentioned before, Japan has placed heavy reliance on her products stockpile for carrying on the war. Her strategic storage facilities must still be more or less intact and no doubt hold as much as a three-year supply of gasoline and fuel oil, besides large quantities of charging stocks for processing. The most important storage points are shown on the accompanying map. Their priority as bombing targets can be taken for granted. One obstacle to the destruction of these reserve stocks is the fact that at least a six months' supply is in underground storage, requiring pinpoint hits with the largest bombs made.


U. S. S. R.
Amur River
KARAFUTO IS
HOKKAIDO
Tsitsihar
MANCHUKUO
Hsinking
Vladivostok
Mukden
Chengte
Kalgan
Peking
Tientsin
CHOSEN (KOREA)
JAPAN SEA
Akita
Sakata
Niigata
Tokyo
Yokohama
HONSHU
Nagoya
Kobe
Hiroshima
CHINA
YELLOW SEA
CHOSEN STRAIT
SHIKOKU
KYŪSHŪ
Nagasaki
Chinkiang
Shanghai
Hangchow
Ningpo
EAST CHINA SEA
PACIFIC OCEAN
RYUKYU ISLANDS
OKINAWA
Yenping
Foochow
Taihoku
TAIWAN (FORMOSA)
Canton
HONG KONG
Legend
OIL FIELDS
SYNTHETIC OIL PLANTS
CRUDE OIL AND SHALE OIL REFINING CENTERS
MAIN STORAGE SITES
SCALE OF MILES
0 100 200

The Rule *of* Reason
In Oil and Gas Regulation

By ERNEST O. THOMPSON, Member, Texas Railroad Commission

Written Expressly for The Oil Weekly

IN THE matter of waste prevention and conservation of oil and gas produced from privately owned property the rule of reason must always govern. In fact the rule of reason should always apply.

The only way to absolutely prevent *all* physical waste would be to shut in and close down all oil and gas production. This is because there is some *unavoidable* waste incident to all oil and gas production.

But shutting down and closing in of all production of oil and gas would be against the rule of reason—against common sense. It would be reducing the waste prevention regulation and conservation of oil and gas to an absurdity.

This is the danger lawmakers and regulatory officials must always carefully guard against in our zeal to do a perfect job. Our rules and regulations and the standards set up in our laws must be reasonable, fair and equitable. We can seldom do as good a job as we are requested to do by the perfectionist. After all the aim in view always is to produce oil and gas. It is not the aim or purpose to prevent such production. In fact it is seriously doubtful that production of oil and gas on privately owned land *can be legally prevented by law.* It could not be absolutely prohibited in toto.

All that can actually be done on privately owned properties is to prescribe and enforce the best known methods of production for the prevention of waste as defined by constitutional statutes and reasonable rule and regulations.

The ultimate aim is to see to it, in the public interest, that the greatest possible amount of oil and gas be produced for the use of mankind over the entire producing life of the oil or gas field in question. The object of all our conservation and waste prevention laws and rules is to produce oil and gas without permitting avoidable waste.

State-Owned Properties

Of course in the case of prospective oil and gas properties wholly owned by the states themselves or by the United States as a nation, the legislature of the particular states in the case of lands owned by that state may properly decide by legislation whether the state lands will be opened up for development at any given time or that the state determine to withhold the sale of leases until some future date. This is a proper function of the state government in providing for the future reserves of oil and gas.

Likewise the Congress of the United States may very properly decide by act whether to open United States owned government lands for prospecting for oil and gas.

The government, state or national, however, may not properly say that private lands may not be developed. So far our law is and always has been that ownership of private property includes the use of that property and producing from it so long as the use and production does not interfere with the rights of the general public (such as creating a fire hazard) or the rights of a neighbor (such as crowding a line or unduly draining adjoining lands).

In their zeal to do a perfect job, lawmakers must remember that the only way to avoid some waste is to call a halt to production

All that the government, state or federal, can do as regards private lands, so far as oil and gas development is concerned, is to follow the rule of reason in preventing physical waste in the production of these natural resources.

The reason that the State of Texas may regulate and prescribe rules and regulations covering the production of oil and gas is that the constitution of the state recognizes and asserts a public interest in the natural resources of Texas.

Article XVI, Section 59a of the Texas constitution was adopted on August 21, 1917, and became effective on that date. It provides:

"The conservation and development of all of the natural resources of this state . . . are each and all hereby declared public rights and duties; and the Legislature shall pass all such laws as may be appropriate thereto."

Pursuant to this provision of the Texas constitution, the Legislature of Texas passed proper statutes giving life to the constitutional intention and designating the Railroad Commission as the agency of the state to carry out the directions of the Legislature in the matter of oil and gas production control.

It might well be asked by anyone, "Why do you call the Oil and Gas regulatory body the 'railroad commission'?"

The answer is a simple and reasonable one when the history of oil and gas regulation in Texas and the history of the Texas Railroad Commission are known.

Railroad Commission History

Here is the history of this seeming anomaly: The Railroad Commission of Texas was created by constitutional provision in 1892 for the purpose of regulating the railways of Texas as to safety, issuance of bonds and securities and the regulation of rates and charges. The commission performed this function throughout the years from its creation until the time of the handing down by the United States Supreme Court its decision in the celebrated Shreveport rate case in 1916. In that opinion the state regulatory authorities were stripped of rate-making powers which affected interstate commerce by rail. This left the Texas Railroad Commission with time on its hands.

Therefore, when it seemed desirable to name an agency to regulate oil and gas production in Texas, the Legislature used the rule of reason and handed this job to the already existing constitutionally created Railroad Commission instead of creating another board, bureau or commission.

Thus the regulation of oil and gas production came into being in Texas.

"Law is the rule of reason applied to existing conditions. Obviously, when conditions change there must be a corresponding change in the law, else it would cease to be a rule of reason and would become a mere arbitrary static rule. Law indicating, as it does, the just relations that obtain under given conditions, can be static only so long as the conditions to which it applies remain static. It does not prevent new conditions from arising, for if it did, and could, progress would be arrested. On the contrary, it aims to adjust relations to conditions as they exist when rights or obligations are claimed under them, and in proportion as it does that equitably it performs its true function. Whenever it arrests or clogs true progress it ceases to function truly. To do justice, then, under existing conditions, is its paramount office—all else, even the most venerable precedents, must yield to that office." Milwaukee v. Milwaukee Electric R., etc., Co., 173 Wis. 400, 406, 180 NW 339, 181 NW 821.

There can be found no field of action where the fast advance of science and technology has made more necessary the shifting of methods and change of approach. Those methods which seemed advanced when adopted have been quickly outmoded. The only constant was change and all have been for good.

Never perhaps has there ever been a more appropriate place or occasion for constant use of the "rule of reason" than has been offered in the administration of the oil and gas laws, rules and regulations of the State of Texas.

It is generally recognized that the science of petroleum engineering is relatively new.

Improvement of Technique

Fifteen years ago when a young college graduate in petroleum engineering went out to a drilling well pursuant to his duties and went on the derrick floor

■ CONTINUED ON PAGE 45

Casinghead Gas Accounting

Labor Tripled by Residue and By-products Values

By K. R. TIBBETS, Sinclair Prairie Oil Company

COMPANIES engaged in buying or selling casinghead gas have procedures of accounting that fit their respective policies and requirements. These procedures are probably dissimilar in many respects, yet the final results attained are always the same. The progress made in the manufacture of casinghead gasoline over the past 15 years has necessitated changes from time to time in accounting procedures. In the earlier days of the industry the only value of casinghead gas was the gasoline content value. Contrast this with the present day, when usually the value of casinghead gas consists of two other values in addition to the gasoline content value; namely, by-products or butane/propane value and residue value. Along this line it would be reasonable to say that these two additional values have approximately tripled the amount of work in gas accounting.

Typical Procedure

Companies engaged in the gas business have different methods of setting up their accounting but a typical procedure by a major operator in the Mid-Continent area might help other operators and is given herewith.

This company's gas accounting business is handled by two sections, the first being a part of the gas measurement and gas contracting division of the gasoline department, and the other being a part of the general accounting department.

The first step in gas accounting starts with the contract to purchase gas from a lease of which a summary is made by the Gas Contracting Division. A copy of the contract is furnished to the Lease Department which in turn furnishes the Gas Accounting Sections with a division of interest showing names of working and royalty interest ownership and the proportion owned by each owner. The Gas Measurement Division supplies a meter installation report and a physical test report of the gas to be purchased.

The majority of field meters have seven-day clocks and the charts are changed the 7th, 14th, 21st, 28 and the last day of each month. The identifying information on the chart, as to producer, lease name, line size, orifice size, coefficient, and date, is affixed on the chart by the addressograph, this work being done by the first section (see Figure 1). These charts are mailed to the field approximately seven days in advance of the time they are to be placed on the meter.

This method of heading charts has proven very economical and has eliminated numerous errors that occurred due to typing the charts each week in the many field offices. Also this enables the main office to control and check this information as the typing was previously done at various points far removed from the main office by personnel who did not realize the degree of accuracy necessary to assure proper handling later.

The charts, when received from the field, are first run on the integrator and then passed to the gas accounting machine for the calculation of the volume of gas at standard conditions of 60° F. temperature, four ounce pressure base, and 1.00 specific gravity. (See Figure 1.)

Figure 1. Chart Headings and Chart Calculations

Posting Charts

The charts after having been calculated are returned to the integrator operator who holds them until the complete month's charts are received. Then the charts are ready for posting and are passed to the gas accounting machine and posted to the master statement. (See Figure 2.) These chart postings are next checked by the comptometer operator and the statements passed to the residue clerk for alignment with the residue split sheet. (See Figure 3.)

The residue split sheet is then returned to the gas accounting machine for calculation of the first half of the residue distribution which results in the volume available for sale from all leases connected to the plant. The statements and distribution sheet are returned to the residue clerk for verification and also for the making of statements charging all producers for the excess residue used on their various leases. These excess charges are accumulated with the other sales of residue from the plant and make-up purchases and boosting charges, if any, are deducted, leaving 100 percent net proceeds for residue sold from the plant.

The 50 percent of net proceeds or the amount due the leases is added to the residue distribution sheet and the sheet is returned to the gas accounting machine for calculation of the last half of the residue which gives the value of residue due each lease.

The distribution sheet next goes to the residue clerk who types the pertinent residue information on each gas statement.

Where butane/propane values are distributed on a basis of thousand cubic feet of casinghead gas, this work is done, in the interim, between the first and last

half of residue calculations. The information as to total sales of butane/propane is supplied by the sales department and a rate per MCF of casinghead gas for butane/propane value is calculated therefrom.

The pertinent plant information is also transcribed on all gas statements by the addressograph (see Figure 2) as follows: National Petroleum News 26-70 average quoted price; gallons butane/propane sold; average sales price for butane/propane; value received for butane/propane; contract percent; MCF of casing gas processed by plant; rate per MCF of casinghead gas for butane/propane value; residue available for sale all leases; volume of residue sold; 50 percent net proceeds due leases and pattern number.

Value Computed

The gas statements are returned to the gas accounting machine for calculation of the gasoline content and butane/propane value which when added to the residue value gives the total value of casinghead gas purchased from the lease. This value is distributed (by the use of reciprocals) to working interest, royalty interest, taxes, etc. (See Figure 4.)

The statements are next checked by the comptometer and returned to the gas accounting machine for the voucher control, on which seven vital control figures are accumulated. (See Figure 5.)

The statements are then checked against the voucher control, and both are forwarded to the second section for the completion of gas accounting.

After receipt of the statements and voucher control by the second section the first step taken is the posting from the statements of all accounts payable, royalties payable, and suspense items, to their respective ledger account sheets, and a journal sheet of all postings is made simultaneously. (See Figure 6.) The total of the various postings on this journal sheet will tie with the total of the voucher control. (See Figure 7.)

After the statements are all posted to the various accounts they are sent to the duplicating department for making the required number of copies of each statement. Upon the return of the statements from the duplicating department the copies are sorted for the voucher, producer, state reports, royalty owner and file.

A copy of the statement accompanied by a check is forwarded to the producer and likewise in some cases to the royalty owner; a copy of the statement accompanied by the state report and a check is forwarded to the state for tax payment; and the voucher, which includes copies of all statements at each plant with the voucher control, is forwarded to the tabulating section of the general accounting department for accounting to all company-owned leases and general accounts.

Figure 2. Statement of Gas Purchased

1185 93 45-Z-138

PRODUCER	OIL & GAS COMPANY	MONTH OF	JAN. 1945
LEASE	A K JONES	LINE SIZE	8
METER STATION - #	1 LOCATION SE 36-22-6E	ORIFICE SIZE	3.180
PURCHASER	PLANT 35	7 DAY BASE COEF	350
W. I. SETTLEMENT	SPEC. GRAD. SCHEDULE NPN 26-70	GASOLINE CONTENT	3.80 GPM
R. I. SETTLEMENT	DITTO	SPECIFIC GRAVITY	1.248
		SP. GR. FACTOR	.8944
		P. B. FACTOR	

Coefficient Based On—60° F. Temperature—4 oz. Press.—1.000 Sp. Gr.—Flange Connection. Gross production tax deducted and paid, and payee accepts such deduction and authorizes payment thereof to State.

PRICE PER GALLON (NPN 26-70)	$	.0475 (ASP)	(MCF)	
TOTAL GALLONS B/P SOLD AND A.S.P		2199844	.022268	
VALUE OF B/P SOLD AND CONTRACT %		48986.24	20%	
TOTAL M.C.F. TO PLANT AND RATE PER M.C.F		428572 —— .02286 ——		
RES. AVAILABLE FOR SALE—PLANT M.C.F		207615		
RESIDUE GAS SOLD FROM PLANT M.C.F		54872	PATTERN DP-920	
50% OF VALUE OF ALL RESIDUE SOLD	$	1369.49		
GAS UTILIZED M.C.F		9499		
GASOLINE CONTENT TOTAL GALLONS		36096		
GROSS VALUE	$	1579.20		
GASOLINE CONTENT VALUE OF GAS	$	395.80 25%		
BUTANE AND PROPANE VALUE OF GAS	$	217.15		
RESIDUE REMAINING	%	.5620		
RESIDUE REMAINING (4 OZ.)—M.C.F		5338		
RESIDUE RETURNED TO LEASE (4 OZ.)—M.C.F		1050		
RESIDUE AVAILABLE FOR SALE—LEASE M.C.F		4288		
LEASE'S % OF TOTAL AVAILABLE	%	.0206536		
RESIDUE VALUE OF GAS	$	28.84		
TOTAL VALUE OF GAS	$	641.79		

INDICATED M.C.F		Gas Tests
2302	7	
2506	14	
2275	21	
2610	28	
776	31	
10621	INDICATED	
9499	CORRECTED	

266.74	OIL & GAS COMPANY
66.69	HARDY OIL COMPANY
200.06	JOHN DOE
14.04	GROSS PRODUCTION TAX ½ WI
18.05	GROSS PRODUCTION TAX ½ WI & RI
76.21	VARIOUS ROYALTY OWNERS
641.79	

Work Highly Coordinated

All the above-described work by both sections has to be completed by the 15th of the month and cannot be started until the last chart is received after having been removed from the meter on the last day of the previous month. It is also necessary to have close supervision of this work in order to coordinate all phases of the procedure to avoid loss of time and effort.

The statements and a file copy are returned by the second section to the first section where ledger postings of the gas purchased from each lease are made.

A portion of the balance of the month is spent by both sections in accounting for gas sold from company-owned leases to outside companies. This accounting follows a procedure similar to that for gas purchased as to making of statements, distribution of royalty, distribution of working interests, making vouchers and controls, posting to ledger accounts, and disbursement of funds.

In addition to this work the first section prepares the following month's gas statements, which are headed on the addressograph; types meter information and tests on these statements, as well as typing various work sheets as used in Figures 3 and 8. These work sheets are typed in hectograph inks and sufficient copies are made to last for the period during which the tests are in effect. Also, the lease distribution sheets as well as various other records are kept up to date.

The second section also has various records to keep up to date as well as

Figure 3. Distribution of Residue Sales

DISTRIBUTION OF RESIDUE GAS SALES FROM PLANT 35 — JAN. 1945

PRODUCER	LEASE	WET GAS VOLUME	GPM	% RET'BLE	VOLUME RET'BLE	VOLUME RETURNED	EXCESS	AVAILABLE FOR SALE	% OF TOTAL AVAILABLE FOR SALE	GROSS VALUE
Oil & Gas Company	A. K. Jones	9,949	3.80	56.20	5,338	1,050		4,288	.0206536	28.84
All other leases at Plant		418,623			231,618	44,143	15,852	302,327	.9793464	1,367.65
		428,572			236,956	45,193	15,852	207,615	1.0000000	1,396.49

Figure 4. Distribution Ledger Sheet

1185 93 45-Z-138
OIL & GAS COMPANY
A. K. JONES
1 LOCATION SE 36-22-6E
PLANT 35
SPEC. GRAD. SCHEDULE NPN 26-70
DITTO

.4156250	OIL & GAS COMPANY	8/16 of 7/8 WI
.1039062	HARDY OIL COMPANY	2/
.3117188	JOHN DOE	6/
.021875	GROSS PRODUCTION TAX ½ WI	
.028125	GROSS PRODUCTION TAX ½ WI & RI	
.118750	VARIOUS ROYALTY OWNERS	1/8 RI
1.0000000		

Figure 5. Voucher Control

GAS PURCHASED PLANT 35 JAN. 1945

THEORETICAL GALLONS	CSGHD GAS PURCHASED	G.P. TAX	NET VALUE	COMPANY INTEREST	COMPANY TAX	GAS SALES	LEASE ACCOUNT NUMBER
36,096	641.79	14.04					
		18.05	609.70	226.74	14.04	280.78	1185 93
1,642,849	28,060.53	1,112.80	26,947.73	4,104.59	225.74	4,330.33	
1,678,945	28,702.32	1,144.89	27,557.43	4,371.33	239.78	4,611.11	

Figure 6. Journal Sheet

(This is made by a Burroughs Posting Machine in Section No. 2)

VOUCHERS PAYABLE	GAS ROYALTIES	ACCOUNTS RECEIVABLE (PARTNERS)
200.06	76.21	66.69
22,256.77	586.37	.00
22,456.83	662.58	66.69

various summary statements and schedules to prepare.

The butane/propane value as described in the above procedure was calculated as to certain plants on a price per MCF of casinghead gas regardless of content. This basis is equitable only in plants or areas where the production is from one horizon and there is relatively small difference in constituents of the gas. In plants or areas where the production is from several different horizons and content varies it is usually considered that the more equitable method of distribution is on a gasoline content basis.

This type of distribution is shown by Figure 8. In the use of this type of distribution it is necessary that this be made after the 15th of the month due to the total theoretical gallons from all leases connected to a plant not being available currently; however, some companies are able to obtain this figure currently. The butane/propane value due the leases from this type of distribution is then paid to the lease one month late.

To those who have had considerable experience in gas accounting the above procedure will possibly appear to require considerable paper handling. It has been determined, however, from authorities on machine accounting systems and verified by experience that it is faster and more accurate to have several persons each working on one definite phase of accounting and becoming specialized therein, rather than having the several persons each working on all the different phases of a procedure from beginning to completion. The first instance not only eliminates the possibility of numerous errors but also coordinates the flow of work in a more equitable manner, which, insofar as the time element is concerned, more than offsets the time required for the additional paper handling. This is the method followed in all mass production assembly lines.

In the company setup all phases of gas contracting, measurement, testing and accounting are directed by the same supervision and all inquiries regarding the several phases are answered by personnel familiar not only with the contractual obligation but also acquainted with the representative of the other party to the contract.

Figure 7. Voucher Summary

(This summary is made by adding the figures from the Journal Sheet shown in FIGURE No. 6 to the Bottom of the Voucher Control Shown in FIGURE No. 5)

GAS PURCHASED PLANT 35 VOUCHER CONTROL JAN. 1945

THEORETICAL GALLONS	CSGHD GAS PURCHASED	G.P. TAX	NET VALUE	COMPANY INTEREST	COMPANY TAX	GAS SALES	LEASE ACCOUNT NUMBER
36,096	641.79	14.04					
		18.05	609.70	266.74	14.04	280.78	1185 93
1,642,849	28,060.53	1,112.80	26,947.73	4,104.59	225.74	4,330.33	
1,678,945	28,702.32	1,144.89	27,557.43	4,371.33	239.78	4,611.11	

SUMMARY

Company Interest (Net)	4,371.33
Vouchers Payable	22,456.83
Accounts Receivable—Gas Royalty	662.58
Accounts Receivable—Partners	66.69
Net Value from Above	27,557.43

Figure 8. Butane and Propane Distribution on Theoretical Gallon Basis

DISTRIBUTION OF BUTANE & PROPANE SALES PLANT 35 JAN. 1945

PRODUCER	LEASE	THEORETICAL GALLONS	% OF TOTAL THEORETICAL GALLONS	20% VALUE DUE LEASE
Oil & Gas Company	A. K. Jones	36,096	.0214993	210.63
All other leases to Plant		1,642,849	.9785007	9,586.62
		1,678,945	1.0000000	9,797.25

The above distribution is made in the same manner as the last half of the residue distribution as shown by FIGURE No. 3.

The Rule of Reason

■ CONTINUED FROM PAGE 42

to tell the old time driller to do something different from the old driller's experience, there was generally trouble. Certainly the young petroleum engineer had to use the rule of reason and do some careful arguing to show the older driller that there was some sense and reason behind what he was suggesting as a change of method.

This acceptance of scientific improvements in drilling and producing technique has gradually come about during the last 15 years. No longer does the petroleum engineer find such resistance to his long since proven plans to obtain greater ultimate recovery of oil and gas. This is true even though such production practice means lower production rates in the early life of a field.

By applying the rule of reason throughout the years and by the help of a thorough educational campaign in the schools and teachers colleges of Texas we have gotten the oil and gas producers of our state to be bottom-hole-pressure conscious and gas-oil ratio conscious.

The operators and even the royalty owners have come to realize that the optimum rate of flow does not mean the highest or greatest possible present rate of production, but rather they now see that it "stands to reason" if you produce at that rate which takes the least amount of gas to lift a barrel of oil and maintains best the bottom-hole pressure, they will in the long run obtain several times as many barrels of oil over the life of the field.

It is most interesting to see people now appeal for lower allowable production quotas who formerly fought for bigger allowables. This is simply the evolution and working of the rule of reason.

Production practices which only a few years back seemed revolutionary and confiscatory are now accepted as common rule of reason routine performance.

All in all the regulatory authority must test every regulation and rule by the light of reason. Is it common sense? Does it meet the rule of reason? If it does, time will see the general acceptance of the rule by the industry. Time will see the rule or order upheld by the courts and indoctrinated into the law of the land. The "rule of reason" will prevail.

Geophysical Reconnaissance Work Under Way in Oklahoma

An extensive geophysical reconnaissance campaign is under way in Oklahoma with the greatest activity reported in the Anadarko Basin area in the western part of the state, while considerable work is also centering in the southern district, especially in Grady, Garvin and McClain counties.

Thirty-two seismograph units and six gravitimeter units are operating in Oklahoma, with Gulf Oil Corporation taking the lead and The Carter Oil Company a close second. More units are headquartered at Chickasha than in any other town since the discovery of Magnolia Petroleum Company's deep distillate well east of the Chickasha gas area.

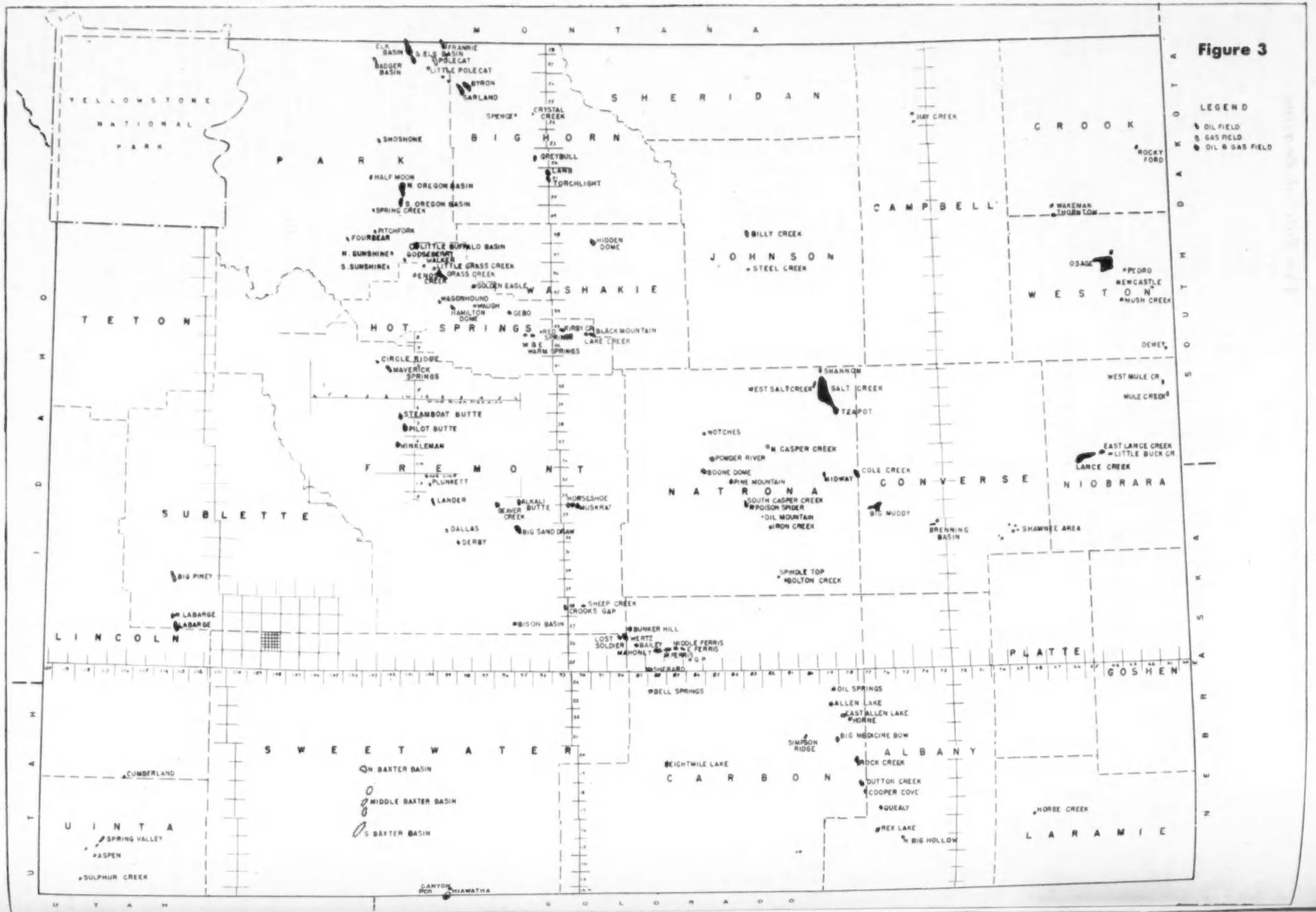


Figure 3

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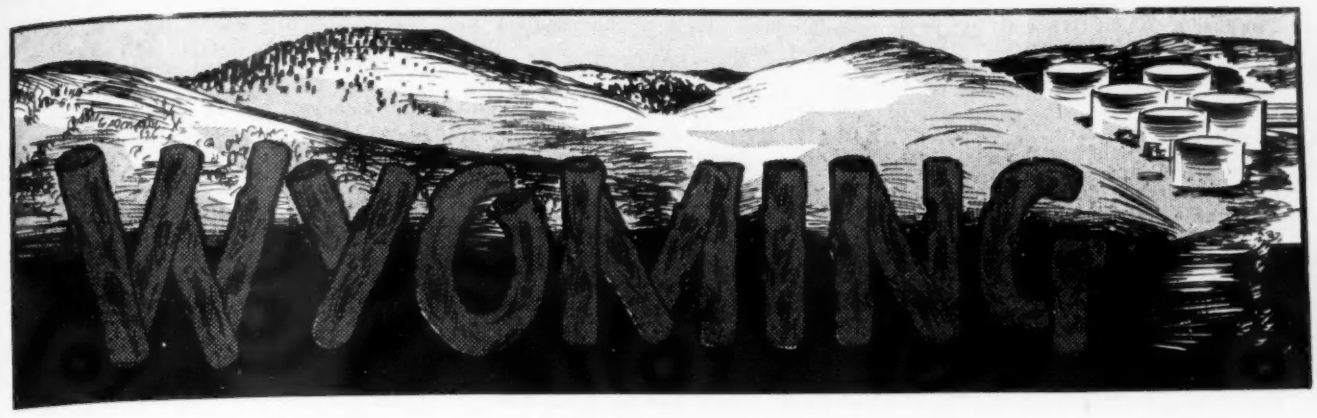

Part 2

Oil and Gas Prospects

By PIERRE LaFLEICHE, State Mineral Supervisor, Casper, Wyoming

THERE are 140 oil and gas fields in Wyoming. However, 34 of these may be eliminated as having little or no commercial aspect from the formations thus far tested. Of the remainder, 39 are small oil or gas fields which are or have been of commercial importance but of stripper or marginal character. Most contain only one or two wells. The remaining 67 are commercially productive of oil or gas, or both. Reference to Figure 3 shows the location of the oil and gas fields.

The physiography and general geology of Wyoming were discussed in Part I, published in the July 9 issue of THE OIL WEEKLY. The oil and gas fields and future prospects of Wyoming will be considered in this installment.

Oil and Gas Fields

The Salt Creek field in Natrona County is one of the major fields of the United States, having a productive area of more than 20,500 acres and having yielded to January 1, 1945, more than 312,800,000 barrels of oil, or nearly twice as much as the accumulated production of all states bordering on Wyoming. Five Wyoming fields have produced in excess of 25 million barrels of oil, and six between 10 and 25 million barrels.

The per acre yield of Wyoming oil fields is a highly variable factor, depending on the number of producing sands, thickness, etc. Lost Soldier, for example, has produced to January 1, 1945, over 65,000 barrels per acre from sands above the Tensleep, and about 12,400 barrels per acre from the Tensleep. Considering the extent of the proved Tensleep reserves the ultimate recovery from this sand possibly will approximate 65,000 barrels per acre. This field is productive in nearly every sand from the Frontier, found at 195 feet, through the Tensleep at over 4000 feet.

The Salt Creek field has had a yield to date from the first Wall Creek sand of about 18,000 barrels, the Sundance sand 9600 barrels, and the Tensleep about 2000 barrels per acre. Since the latter was not placed on continuous production until 1938, the ultimate production probably will be in excess of 8000 barrels per acre. Altogether, there are about ten producing horizons in the field.

Other representative fields have had per acre yields in the following amounts: Grass Creek, Frontier sands, 19,100 barrels; Elk Basin, Frontier sands, 15,000 barrels; Lance Creek, all sands, 18,000 barrels; Rock Creek, all sands, 16,900 barrels; LaBarge, 15,700; Big Muddy, all sands, 11,000; Hamilton Dome, Embar, 11,800 barrels; Dallas, 19,800 barrels; East Mule Creek, 6200 barrels.[5] None of these fields is exhausted and the ultimate per acre recovery will in most cases be considerably more. While not complete, these figures give an idea of the yield of some of the typical Wyoming oil fields.

Gas fields are found in nearly every part of the state and the discovery reserves are estimated to be adequate for at least 50 years at the present rate of consumption. Almost every city and town of any size in the state, except in the extreme eastern part, is served gas by these fields, as well as cities and industries in the adjoining states of Utah and Montana. The great Baxter Basin and Hiawatha fields in southwestern Wyoming serve the Utah communities and gas from the Garland field in the northwestern part is piped into Montana. In addition to those mentioned, some of the principal gas fields are Medicine Bow, Allen Lake, Oil Springs, Mahoney Dome, Ferris, Wertz, Sand Draw, Muskrat, Golden Eagle, Little Buffalo Basin, Oregon Basin and Pole Cat.

Productive Formations

Oil or gas has been found in Wyoming in rocks of nearly every age from the pre-Cambrian to the Oligocene. (See Figure 3.) On Copper Mountain in northeastern Fremont County, Twp. 39 n., R. 92 w., oil has been gathering from seeps in the granite and associated rocks and used for fuel[6] Although at the present time no commercial production has been obtained from the Cambrian formation this may not be definitely eliminated as an objective for the reason that very good showings of black oil were found in the Deadwood sands (upper Cambrian) in a deep test well drilled on Pine Mountain, in Natrona County. There is a possibility that the saturation found near the bottom of a deep test well in the South Oregon Basin field was in the Deadwood formation. This, however, has not been definitely established. (Some authorities believe this to be Threeforks, upper Devonian, and not Deadwood, upper Cambrian). In very few of the proved fields of the state has the Cambrian been penetrated. The Big Horn limestone, upper Ordovician series, is likewise not presently productive, although good saturation was found in it in the South Oregon Basin well previously mentioned. This also has been tested in very few structures.

Madison (Mississippian) lime is productive at present only in a few fields in the Big Horn Basin region, and production from the Tensleep (Pennsylvanian) sands is obtained only on the eastern and western sides of the Powder River Basin, in fields on the northeastern limits of the Red Desert Basin and in the Wind River and Big Horn Basins. Embar (Permian) oil is now confined to fields of the Big Horn and Wind River Basins. The Chugwater (Triassic) is productive in isolated cases in certain Big Horn Basin fields, but the accumulation in sands of this series is thought to have migrated through fissures and faults from lower beds.

The Sundance sands (Jurassic) are productive of gas in North Baxter Basin, Sweetwater County, but otherwise production has been confined to the Salt Creek and Lance Creek fields on the west and east sides of the Powder River Basin, respectively, and to a group of fields in the south central and central parts, although a recent discovery was made in the Steamboat field on the west side of the Wind River Basin. For some reason or other no commercial Jurassic production has been found in the Big Horn Basin, although a well in the Byron field produced several hundred barrels of a very waxy green oil from the Sundance.

Cretaceous Productive

Upper and lower Cretaceous rocks are productive in nearly every part of the state. With the exception of the more recent upper Cretaceous formations (Lewis-Fox Hills and Lance), sands and shales of every formation of this age have yielded commercial flows of oil or gas in one field or another. (See Fig-

ure 2 in part 1.) The Cretaceous has produced by far the greater portion of the oil and gas to date in Wyoming, over 277,000,000 barrels of oil having been taken from the First and Second Wall Creek sands of the Frontier formation in the Salt Creek field alone. Practically all the oil produced from the Cretaceous is light green of 30 gravity or above, and sulphur free.

The Tertiary was long considered to have little potential value for oil or gas because of its non-pelagic origin, hence assumed lack of source sediments. As a result of discoveries in LaBarge, Big Piney, Pinedale, Hiawatha and Powder Wash (Colorado), estimations of the value of formations of this period are being constantly revised. The production presently obtained is from sands of the Wasatch formation (Eocene), although relatively small quantities of gas and oil have been obtained from the White River formation (Oligocene) in the east central part of the state. Shallow gas wells with an initial open flow of several million cubic feet have been drilled in the Fort Union formation (Eocene) about 25 miles north of the town of Gillette, and near Arvada, in northeastern Wyoming. However, such gas is nearly pure methane with about 8 percent nitrogen and probably had its origin in common with the formation of the numerous coal beds of the Fort Union in the area. Any petroleum significance or association may therefore be questioned.

Types of Favorable Structure

Nearly all the oil and gas fields thus far discovered lie along the periphery of the great basins and represent first or second lines of folding juxtaposed to the primary folds of the main mountain ranges. The structures thus formed are for the most part narrow, elongated asymmetrical anticlines, the strata on the gentle slope dipping from five to 15 degrees and on the steep slope from 15 degrees to vertical or more. Although there are many exceptions, the steep dip side usually faces the nearest mountain uplift. Some notable exceptions to this rule are the Big Muddy, Lance Creek, Cooper Cove, Rock Creek, Maverick Springs and Circle Ridge fields which face the basin. The structural closure may vary from several hundred to many thousand feet. In some cases the fields are local superimposed highs lying along a single anticlinal trend extending 50 miles or more.

The deepest producing field in the state is the Badger Basin field in the north central part of Park County in Twp. 57 n., R. 101w. The surface formation is Fort Union (Tertiary) and production is found in sands of the Frontier formation at depths from 8200 to 8500 feet. The oil is about 49 gravity. A well drilled in 1940 to 10,181 feet in the Cloverly sands found encouraging saturation at 9753 to 9758 feet. The poor sand section, however, failed to yield a commercial flow and the well was plugged back to upper sands. This structure is characterized by low surface dips, in the order of from one to four degrees, and small closure, and is probably typical of the general nature of structure which will be found productive in the basin areas. The fact that a structure of this type is productive and that such low Tertiary dips are reflected in the strata at considerable depth is very significant and should have influence on the advisability of drilling structures of similar type lying farther out in the basin areas.

The sharply folded narrow asymmetrical anticline of the Rocky Mountain region sometimes presents a difficult problem of subsurface structural analysis, especially if deep drilling is involved, and the correct location of a test well is sometimes more or less of a trial and error proposition. The reason for this is that the axial plane of anticlines of this type as a general rule hades considerably from the vertical and in the direction of the more moderately dipping side, the crest of the fold at the top of the objective formation lying some distance from the surface crest. The hade may not follow academic rules and consequently well locations based on ideal projections may be considerably in error. For this reason many structures once condemned by unfortunately located wells have subsequently been proved productive as, for example, at Oil Springs, Oil Mountain, Crooks Gap, etc. In some structures actual overthrust faulting is believed to further complicate the problem. This may account for failure of tests on such asymmetrical anticlines as Elk Mountain, Simpson Ridge, St. Mary's, Pass Creek, Buck Spring and Boone Dome.

Influence of Faulting

Recent drilling in the Lance Creek and Elk Basin fields has proved that faulting has a definite bearing on accumulation and structure, and further exploration will give more consideration to the possibilities of fault closed structures. In the Lance Creek field, in 1939 and 1940, a well located on the northwestern limits of the field, SE SW Sect. 31, T. 36 n., R. 61 w., drilled out of the Triassic into strata of the upper Cretaceous indicating the existence of a reverse fault with a displacement of several thousand feet. In 1943 a well was drilled in the same quarter-quarter section to 10,910 feet, deepest well in the state, which penetrated all the known producing sands of the Lance Creek field and showed the fault to have a displacement in the order of about 4500 feet. Although this well was a failure, it had saturation in the same sands that are productive in wells only ¼-mile distant, but at about 4800 feet greater depths. This fault is believed to extend along the southern part of the Powder River Basin from Lance Creek southward to beyond Shawnee, at least 40 miles away. An interesting fact in this connection was a statement by J. G. Crawford, chemist of the Casper office of the United States Geological Survey, several years prior to any knowledge of the existence of this fault, that, based upon his analyses of nearly all the crude oils found in Wyoming, the oil produced in the Lance Creek field from the Minnelusa formation (Pennsylvania) was of Cretaceous origin. This is now fairly well substantiated and tends to prove the migration of oil from source beds in the Powder River Basin alien to the present Lance Creek lower reservoir formations. (Converse, Leo, Bell sands). There is a definite possibility that wells properly located on the basinward side of this fault may discover pools similar to some of the fault controlled fields of eastern Texas, as for example at Mexia.

In March, 1945, a well in NW SE of Sect. 5, T. 57 n., R. 99 w., Elk Basin field, drilled through a fault and back into formations that had been previously penetrated, proving the existence of reverse fault of considerable displacement. The presence of a fault with a northeast strike had been mapped sometime prior to this discovery but its character or displacement was not definitely known. (See U. S. G. S. Map Elk Basin.) South of this fault a test well recently completed in NE SE SW of Sect. 20, T. 57 n., R. 99 w., South Elk Basin, made a new field discovery of major importance. It is quite possible that faulting may have a controlling influence on the accumulation in South Elk Basin and that a substantial area south of this fault will be productive. Here, again, is evidence that faulting may have a considerable control upon commercial accumulation in Wyoming.

In the Baxter Basin gas field, Sweetwater County, faulting plays a prominent part in local accumulation on the structure, but space will not permit of further elaboration.

Although some of the most prolific fields of the United States are of the stratigraphic type, few such fields exist in Wyoming. Foremost among such Wyoming fields is the Osage field on the eastern limits of the Powder River Basin in Weston County. The structure is a series of three terraces and production is found in the Newcastle sand (lower upper Cretaceous). (See Figure 2.) The oil and gas is trapped in sand lenses, no bottom or edge water of any consequence being found in wells thus far drilled in the field. Osage has produced to January 1, 1945, about 5½ million barrels of oil.

Small non-commercial pools have also been found in a sandstone lentil of the Carlile formation (upper Cretaceous) in the Thornton and Wakeman fields about 25 miles northwest of Osage. In the Dewey area, about 30 miles southwest of Osage, very encouraging showings of oil have been found in several wells in the Minnelusa formation (Pennsylvania), one well located in T. 41 n., R. 60 w., having produced small quantities of oil since 1938. This structure is a terrace and the local accumulation probably due to change in porosity.

In western Wyoming the small pools found in sands of the Aspen and Bear River formations (lower upper Cretaceous) in the Spring Valley and Aspen fields probably are controlled by stratigraphic conditions, although they are on the flanks of pronounced anticlinal folds. The producing sands of the Wasatch (Tertiary) in the western and southwestern part of the state are lenticular. The Hiawatha field situated on the Wyoming-Colorado line is a domal fold of low dips producing gas and some oil from the Wasatch, local accumulation being controlled to a marked extent by the rapid changes in sedimentation. A well drilled far down on the north flank of this structure found very good showings of gas and oil in the Wasatch and efforts are being made to condition it as a commercial producer. In the area west of the town of Big Piney, in western Wyoming, T. 29 n., R. 113 w., wells having an initial open flow of as much as 40 million cubic feet of gas recently have been obtained from depths of about 1000 feet in the Wasatch. Stratigraphic conditions undoubtedly control this accumulation.

Oil and Gas Prospects

In considering the oil and gas prospects of a state as large as Wyoming and containing such a variety of geologic conditions, one is confronted with so

many hypothetical values that a full discussion would be impossible here. We must therefore deal with general conditions and base conclusions largely on the results of past drilling and geological reasoning.

Wyoming has many times during its oil history reached a certain point in its recurrent cycle of exploration activity where the general opinion was that practically all the oil and gas fields had been discovered. As far back as 1916 it was stated in a Wyoming publication "That the number of unprospected perfect structures remaining in the state is small. Should oil in paying quantity ever be found in structural terrace, plunging anticline, or behind an outcrop, we will then have to prospect hundreds of such possibilities, but as many such already have been drilled and have been without exception failures, it is foolish to be very hopeful of ever getting much production from them."

So many geologic anathemas have emanated from time to time from more or less authoritative sources that one may wonder whether the intent was to encourage or discourage the discovery of oil. For example, some of the more outstanding are recited as follows: If the Wall Creek sands (Frontier) do not carry oil or gas it is futile to drill deeper. The Dakota sand is a blanket sand and therefore will be flushed of any oil accumulation. The Sundance is not a favorable horizon because of a lack of source sediments. Faulted structures, such as Elk Basin, could not contain oil or gas because of leakage. A Wyoming structure to contain oil or gas must have at least 1000 feet of closure. The productive area of a Wyoming anticline will be proportionately less as deeper sands are developed due to the compression of folding, following about the same order of smaller areas as successive truncations of an inverted cone. Tertiary formations are unfavorable because of their non-pelagic origin, hence lack of source sediments. Sands lying below 6000 feet will be so thoroughly indurated and metamorphosed as to lack porosity.

In order to finally determine the full potentiality of Wyoming's petroleum reserves, future exploration must give due consideration not only to the closed anticline or domal fold, but also to fault closed noses or bulges, and to the stratigraphic trap.

Closed Anticlines

The first type of structure, the closed anticline, warrants primary consideration for the reason that nearly all the presently developed commercial oil and gas fields of Wyoming are located on structures in this category. Such structures for convenience of discussion are considered in the following order: (a) Exposed and known anticlines which have been adequately tested and are either producing oil or gas fields, or condemned; (b) Those which have not been adequately tested, either through failure to explore all possible productive horizons or by test wells improperly located; (c) Those wherein the drilling depth to probable producing sands have been considered excessive, or simply untested by lack of sufficient interest in a particular area; (d) Anticlines concealed by Tertiary unconformity. The structures under (a) will be eliminated from this discussion as of no prospective value.

Under classification (b) it may be stated that although formations in rocks older than the Mississippian have not been proved to be commercially productive, encouraging saturation has been found in some instances, namely at Pine Mountain (Cambrian) and Oregon Basin (Ordovician). On suitable structure, therefore, no test may be considered exhaustive until all the sedimentary strata have been tested. The present producing fields that have been drilled into the Cambrian are relatively few and include Big Medicine Bow, Lance Creek, Pine Mountain, Poison Spider, and Salt Creek. In addition to formations of the Cambrian and Ordovician systems just mentioned, excellent prospective horizons of younger strata underlie such fields as Alkali Butte, Bailey, Beaver Creek, Big Sand Draw, Black Mountain, Boone Dome, Byron, Crooks Gap, Elk Basin, Enos Creek, Four Bear, Golden Eagle, Grass Creek, Hamilton Dome, Hidden Dome, Torchlight-Lamb, Little Buffalo Basin, Pilot Butte, Sheldon, Steamboat, South Elk Basin and Walker Dome, and other fields which have never been tested.

Solution of the overthrust fault may develop producing fields on structures of such type previously condemned. Reward for persistence in solving this problem is attested in the Crooks Gap field, Fremont County, where a good discovery of light oil recently has been made despite six previous failures; also on Oil Mountain where a new test well found saturation in the Tensleep sand, a previous test located too close to the steep flank of the structure resulting in failure. Boone Dome, another sharply folded asymmetrical structure, is being redrilled at a location believed to be more favorable.

Under class (c) fall those structures lying primarily within the basin areas and showing but slight surface evidence of folding. The development of commercial production at Badger Basin, in Park County, involving drilling depths in excess of 8000 feet on structure identified only by low dips in Tertiary strata, should indicate the possibility of similar structures being productive within the great basin areas. "Farmarks" of such structures exist in nearly all the basins and are mentioned in many reports of the United States Geological Survey. In many of the basins, however, especially in the southern and southwestern part of the state, thorough testing will not be possible for many years due to the great thickness of the sedimentary rocks and the present limitations of drilling machinery. Full exploration of certain areas of the northern and eastern basins is, however, a matter of present consideration, especially along the eastern and southern flanks of the Powder River and Big Horn Basins, where evidence of moderate folding exists and the depths involved are not excessive.

We must also consider the extreme western part of the state which has been substantially neglected in the matter of intensive exploration. Here intense folding has produced an anticlinoria, accompanied by major faulting which extends almost the length of the state. Although the orogeny has approached mountain-making magnitude, the oldest rocks exposed are of Mississippian Age, but for the most part Triassic or younger. The sedimentary strata are presumed to be of great thickness. It is a relatively virgin field for exploration and geologic investigation. Notwithstanding the fact that some of the earliest discoveries of oil in the region were made in the southern part of this area, very few deep test wells have been drilled.

Nearly all of the eastern two thirds of Teton County in what is herein called the Snake River Basin is of specific interest from a geological and structural standpoint and to the best of the writer's information no test well for oil or gas has been drilled in the entire county. It is definitely prospective territory.

In class (d), anticlines concealed by Tertiary unconformity present somewhat of an enigma which will have to be solved largely by geophysical means and core drilling. It would be most unreasonable to assume in a region which has been subjected to as intense and widespread folding as has Wyoming that favorable structures do not exist under the extensive coverings of unconformable Tertiary strata which overlie the basins. A study of an aerial geologic map of Wyoming will reveal many localities where anticlinal folds appear to extend under those unconformable strata, or where the Tertiary overlap extends so high on the flanks of the major uplifts as to entirely conceal secondary folds which may be expected to exist on the flanks of the uplift in a similar order and relationship as those exposed structures which form the present productive oil and gas fields. Of special interest in this respect is the area immediately east of the Spring Valley, Meridian and Hoback anticlines along the west margin of the Bridger Basin and also east of the north limits of the Wind River Range, in Fremont County. Also, it may be reasonably assumed that structures of favorable aspect underlie the covering of volcanic braccia spread over the area south and west of the Yellowstone Park in the northwestern part of the state. Likewise, the area in the southeast overlain by White River and associate formations presents some interesting features.

Faulted Structure

The second type, or fault closed structure, has received very little attention and faulting has been studied primarily for what effect it may have on local accumulation and water encroachment on dip closed anticlines. The results of drilling in recent years, as at North and South Elk Basin, Lance Creek and South Oregon Basin, not to mention earlier development of the fault-controlled Baxter Basin gas fields and the fault-induced anticline at LaBarge, should lend encouragement to a more thorough investigation of the possibilities of areas where similar conditions prevail. Faulting along the south side of the Powder River Basin, the south flank of the Owl Creek Mountains and in western Wyoming certainly deserves special consideration.

Although many of the most prolific oil and gas fields of the United States are of the third, or stratigraphic type, and have contributed a large share of the national production, their discovery is usually more or less of a fortuity. In Wyoming thus far only one field, Osage, of this category has produced any appreciable quantity of oil. This may be accounted for primarily because little consideration has been given to the possibilities of such occurrences. Exploration has been concentrated on the anticlinal fold and most wildcatters are hesitant to drill "off-structure" tests because of the hazards involved. The more or less intensive random drilling, such as has been experienced in the Midcontinent area and other regions and

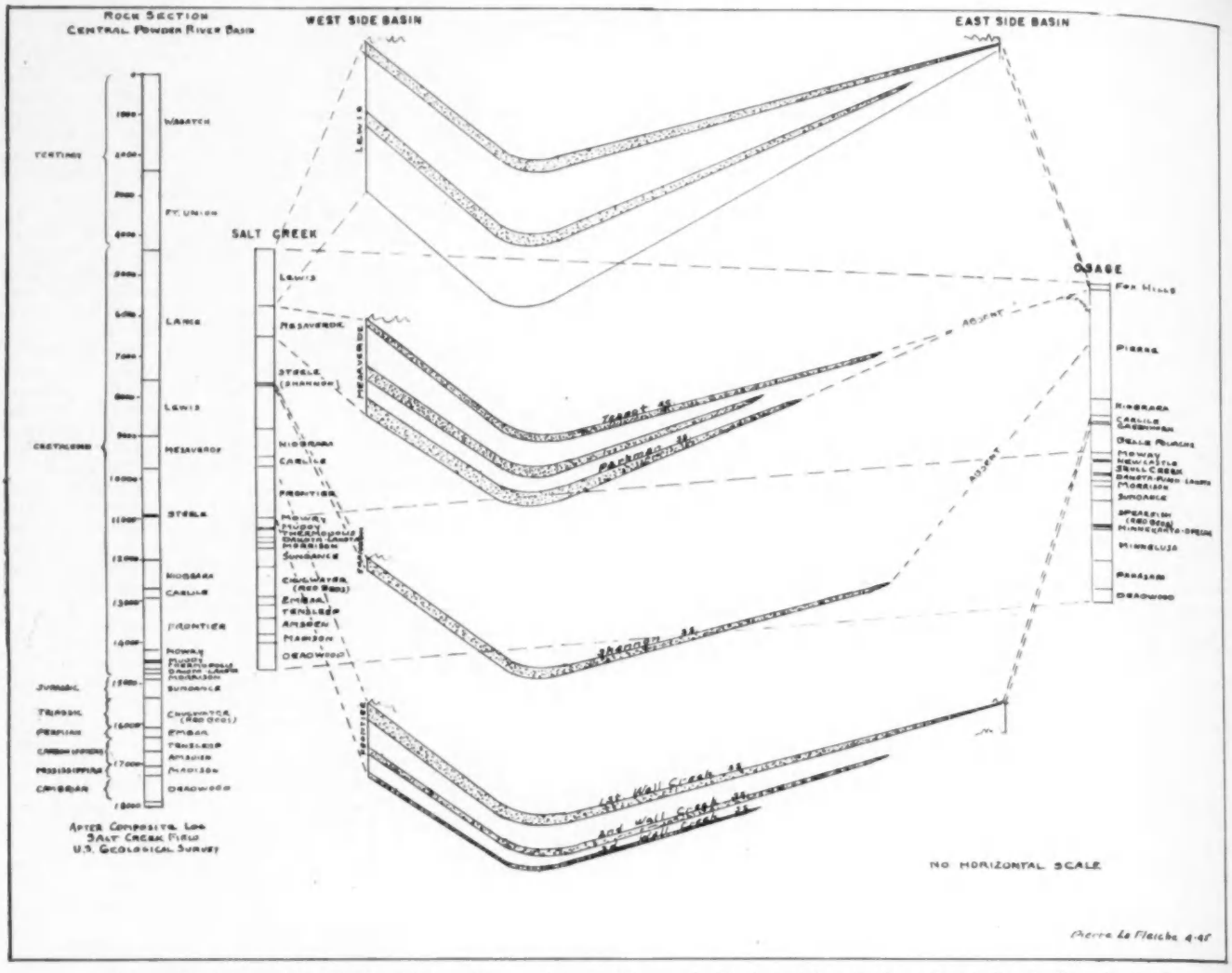

Figure 4. Diagram of hypothetical facies changes of Lewis, Mesaverde, Steele and Frontier formations in Powder River Basin.

to which the discovery of many of the stratigraphic pools may be attributed, has not been had in Wyoming. The possibility of major pools of the stratigraphic type occurring in Wyoming is, however, definitely favorable.

Space will not permit of full consideration of the facies aspects of the many formation members throughout the state; consequently, discussion will be limited to two areas which possess some interesting features, i.e., the east part of the Powder River Basin and the west side of the Bridger Basin.

On the east margin of the Powder River Basin is the Osage field. Here the controlling factors of accumulation are stratigraphy and structural terracing. Many localities in this area have yielded small quantities of oil under similar conditions as at Newcastle, Thornton, Wakeman and Moorcroft and many remain untested. In the Dewey area south of Osage many encouraging showings have been obtained in strata of Pennsylvanian Age on a broad terrace and there is a possibility that further drilling here will develop "shoestring" pools of definite commercial productivity where sand conditions are favorable, although the initial well yield may not be expected to be large.

A study of the comparative stratigraphy of Cretaceous rocks on the west side of Powder River Basin and on the east side shows a pronounced thinning toward the east of several sandstone members. (See Figure 4). For example, the thick, previous sands of the Mesaverde formation on the west side of the basin are non-existent on the east side; the Shannon sand wedges out entirely from west to east and is not found on the east margin of the basin except at Lance Creek, where a thin remanent sandstone has been called Shannon; the First Wall Creek sand which has produced large quantities of oil in the Salt Creek field becomes only a thin sandstone lentil on the east, the Second and Third Wall Creek sands disappearing entirely to the east. The trough of the Powder River syncline is believed to lie well toward the west side of the basin. Therefore, if the transition of the aforesaid sandstones from thick pervious sand bodies to shales or impervious sandy shales occurs along the long regionward slope eastward toward the Black Hills uplift, then perfect conditions prevail for stratigraphic closure and the writer is optimistic to the extent of believing that somewhere on the east side of this basin will be found stratigraphic pools of major importance.

Favorable Sedimentation

In western Wyoming the accumulation of oil and gas previously mentioned at Hiawatha and Big Piney is controlled in part or in whole by stratigraphy. Thorough exploration along the western and southern limits of the Bridger Basin may disclose many gas and also possibly oil fields of economic value. The nature of sedimentation in the Wasatch (Tertiary) is distinctly favorable. Also, angular unconformity between Tertiary strata covering the older rocks which rise westward out of this basin may arrest migration to such extent that pools will be formed. This has interesting possibilities.

Conclusion

Contrary to the gloomy forebodings of some prophets of the past, Wyoming has advanced rapidly to the forefront in new field discoveries. The results of exploration have been eminently successful. The many new field and new pool discoveries have created a general feeling of optimism. Known reserves have been very substantially increased. Economic conditions more than anything else will determine whether or not the present exploration activity can be sustained. If it is, there are sufficient reasons for believing that many new fields will be discovered, some of major importance, and that Wyoming will become an increasingly important factor in the oil and gas economy of the nation.

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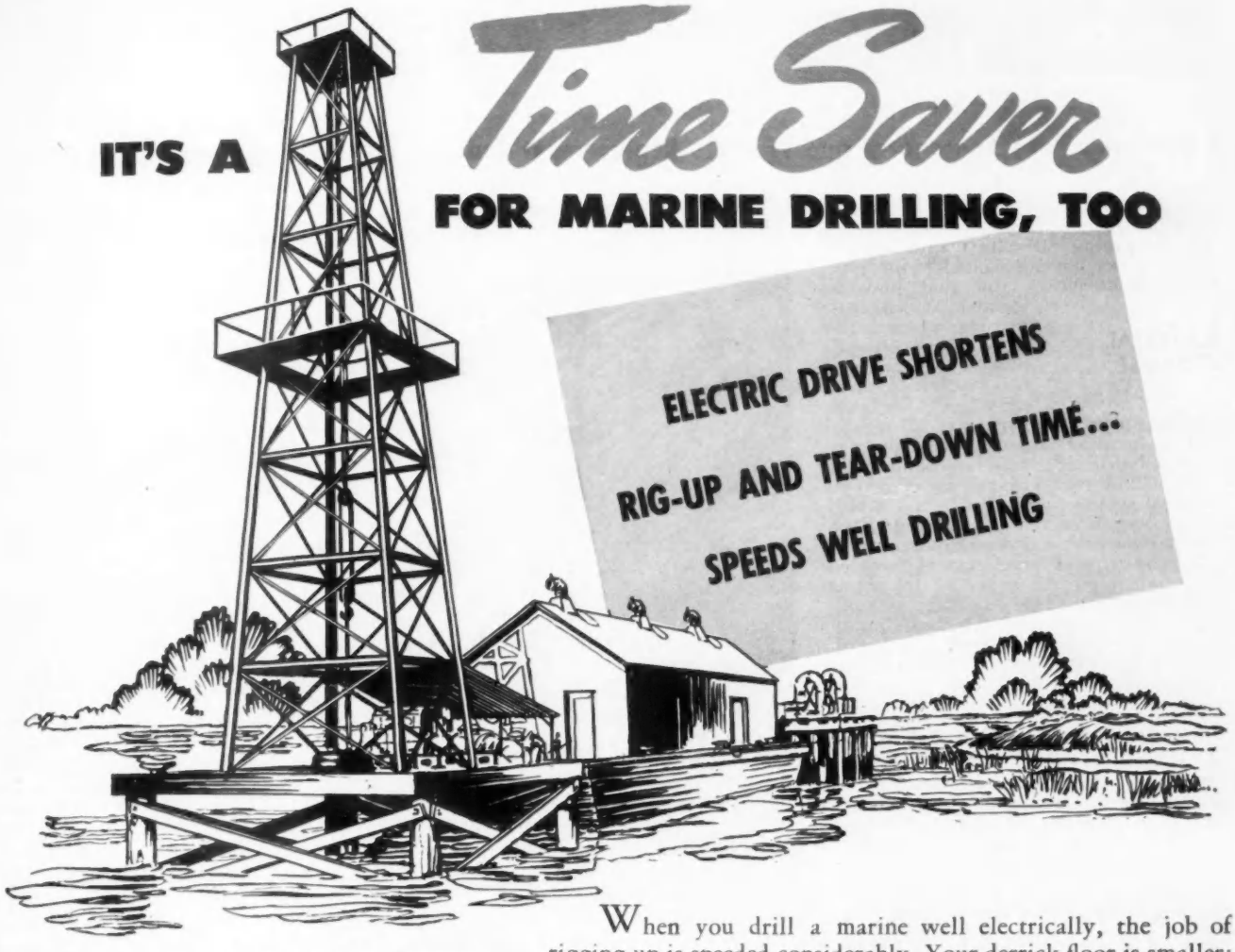
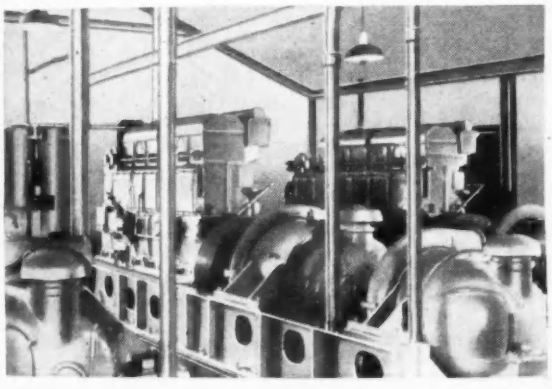
IT'S A *Time Saver* FOR MARINE DRILLING, TOO



When you drill a marine well electrically, the job of rigging-up is speeded considerably. Your derrick floor is smaller; less structural work is required. Instead of building a big, extensive, pile-supported base for your power plant, you put prime movers and generating equipment in mobile barges. Power transmission is simple—you merely string cables between power barges and derrick. Similarly, when you tear-down, the job goes quickly and easily.



Interior of power barge, showing two of the three diesel-driven, 125-kw G-E generators supplying power to a rotary drilling rig. Rig is operated by G-E direct-current motors with generator-voltage control.

WHAT ARE YOUR DRILLING CONDITIONS?

Whether you are planning a marine or dry-land drilling installation, you will be interested in seeing how closely the motor torque and speed characteristics of a G-E drive are matched to drilling-rig service requirements. Because the d-c drive provides a cushioning effect that reduces twist-offs, it is easier on drill pipe. Moreover, the accurate, finger-tip control that you get with a properly-engineered d-c drive saves time on difficult fishing jobs and helps keep your bit on bottom a larger percentage of the time.

G-E rotary-rig drives, which include specially designed armored motors with steel frames and large shafts and bearings, have made an excellent record in cutting the cost of deep drilling. Ask our nearest office for complete information on the latest developments in electrified drilling. *General Electric Company, Schenectady 5, N. Y.*

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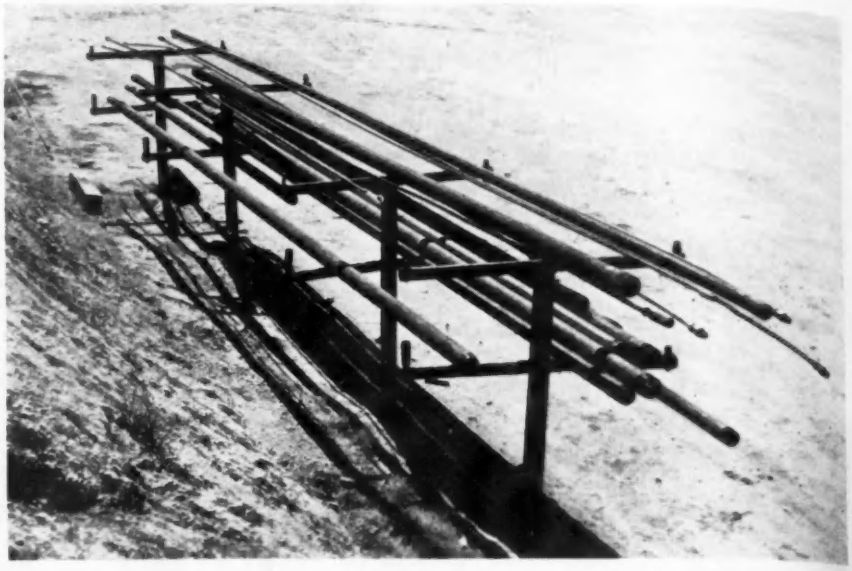
Classifying Rack Segregates and Protects Replacement Tubular Parts

In this period of scarcity of tubular materials it is more important than ever that a running tally be maintained for every miscellaneous "stick" of pipe, tubing and sucker rod that may be located at various points about the lease. One company makes this an easy task by setting up at each well or tank farm site a small, inexpensive, all-welded rack upon which is placed every piece of unused, but usable, material found in the vicinity. The rack is made up of several identical sections and may be assembled in any length or manner desired. Each section consists of a 4-inch post having two cross-arms of 2-inch material welded to it, much on the order of telephone pole cross-arms. The outer end of each arm is provided with a stop consisting of a short pin made from sucker rod with rod box still attached, and which is run through a hole cut in the pipe.

MATERIAL STORAGE

Placed out on the edge of the location where they will not interfere with normal operations, these racks are more than paying their way. Their accessibility encourages the immediate "filing" of all odd pieces of material that may be left over from a pulling or repair job. Wells in this region normally are stripped down to the bare essentials; that is, pipe racks, and in most cases the derricks, are removed from the well, leaving no place for storage of odd pieces of material. Instead of hauling this material back to the centrally-located yard, requiring extra handling each way, the pieces are now left in the field where they are more likely to be used again. With this open type of track, where they may be kept in a roughly classified order, it is not difficult to pick out desired material at a later date when need for it arises. Individual elements of this type of rack may be welded up in the shops and the units then grouped or installed in the field in any number or spacing arrangement required. Aside from the improved efficiency of general lease operations resulting from this racking system, they bring about an intangible benefit through their tending to keep locations and lease installations clean and orderly.



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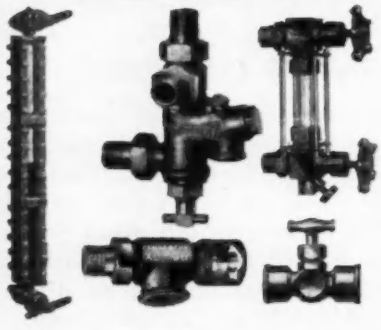
PRODUCTS



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See Pages 2450 to 2455, Composite Catalog.

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Detachable Rack Converts Pick-Up to Pipe Truck

On small Kansas leases which do not have a lease truck big enough to haul pipe in the usual manner, it is frequently necessary to move a few joints of pipe to the job with a pick-up which normally serves as gang transportation. One foreman improvised a support which quickly and safely handled pipe, and still leaves the truck bed available for other materials.

PIPE HAULING

After forming the usual heavy-duty bumper from 3-inch pipe, he had welded to the top of the right end of the unit a short one-inch nipple. Directly above the through brace which ties together the two running boards, and in line with the upper socket, he bolted a reinforcing plate to which had been welded a second 1-inch nipple.

The supporting device shown in the photograph was then bent and welded into shape, so that the round bars fitted the two nipples, while the square ends were located in the sockets on the truck bed normally designed to take stakes for bulky loads.

Set screws prevent loss of the support when it is not held in place by a load, yet permit quick removal when desired. Although as high as 10 joints of 2-inch pipe have been carried over rough lease roads in this rack, no damage to pick-up or material transported was noticeable.

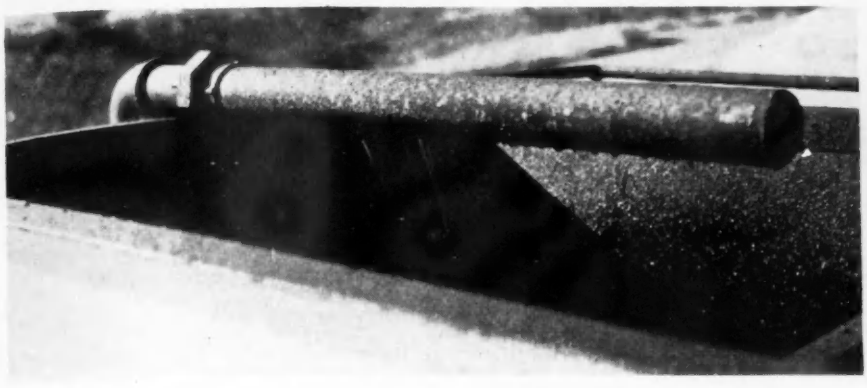
$5.00 is paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, P. O. Box 2608, Houston 1, Texas

Slotted Nipple Distributes Flow to Weigh Meter

METERING OIL FLOW

In areas where oil produced is of heavy gravity and the production rate is relatively small, a problem often exists where weight-type meters are employed to gauge production. Production of this type usually comes in short "bursts" or slugs, followed by a blow of gas. If the lead-in pipe is directed into the meter hopper, inaccuracies will develop in gauging due to much of the oil being splattered out before it is properly weighed.

A simple means of checking this condition consists of terminating the lead-in pipe with a horizontal, long nipple closed at the outer end, and mounted directly above the meter pan. Running along the length of this nipple on the bottom side is a tapered slot, narrowest at the lead-in end of the pipe. This provides for a more even distribution of the "bursts" of fluid and gas, and allows the fluid to flow out in more or less of an even stream along the length of the nipple. Length of the nipple is governed by the length of the weigh meter pan above which it is mounted. A cleaner, more easily maintained gauging installation and surroundings is but one of the benefits realized in addition to the improved gauging records being obtained with this method.



Swing-Mounted Unit Aids Water-Leg Brine Control

SALT WATER SEPARATION

An increasing water cut in the daily production usually calls for changing in the tank gauging procedure. A higher level for oil-water interface is desirable to allow greater time for water and bottom sediment to drop out before the oil is topped off and switched to the clean-oil tank. An economical way of effecting such a change, and arranging it so as to present a minimum of work to the gauger in handling the long grasshopper leg, is illustrated.

The water leg consists of two parallel risers—one the water leg, the other, the run-off line—at the top of which is an adjustable cross-over, swing joints in the latter permitting the top part of the leg to be moved in adjusting the run-off level of the water-oil interface.

Operation of this leg is as easy as it is simple in construction. The gauger, in walking up the tank stairway to gauge his tanks, has only to reach out and adjust the top part of the leg to any desired level. This one-man operation is contrasted with some grasshopper leg systems wherein at least two men, or some hand-cranked winch is required to raise the entire leg filled with fluid. Weight of the fluid in the relatively short adjustable portion is not great and by maintaining the proper degree of tightness in the swing joints, it will stay upright by itself, but if it has to be laid out to near-horizontal it may be necessary to rig a light line in securing the fitting back against the railing or tank side.

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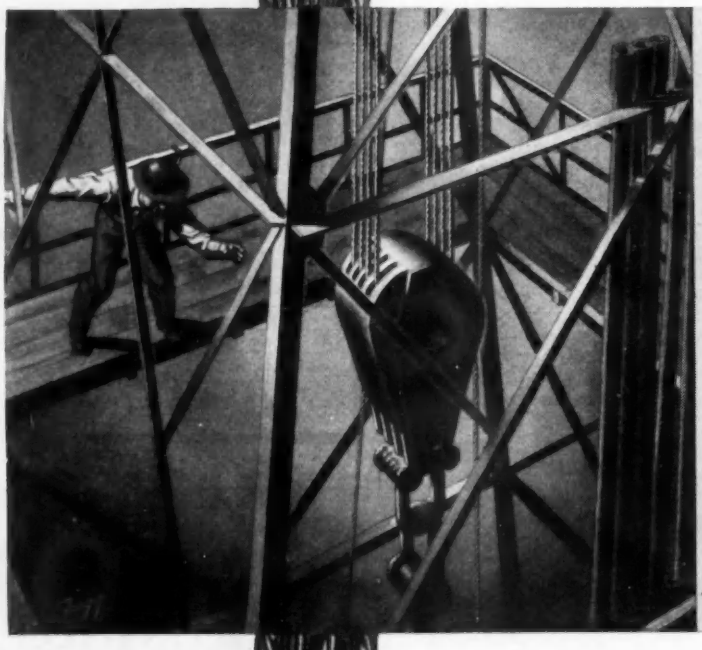

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The Outlook

Total demand for all oils will exceed 2 billion barrels this year for the first time in history—an average of more than 5,500,000 daily. Requirements so far this year have run about 10 percent above those last year.

* * * *

Although the industry probably will drill several hundred less than the 5000 wildcats sought by PAW this year, it likely will find as much new oil as consumption during the year, thereby ending the year with crude reserves about equal to those at the year's beginning. For while consumption is above last year, successful exploratory well completions also have been greater in number.

* * * *

A proposal will be made to the O'Mahoney Committee that postwar foreign oil be purchased by the U. S. and stored underground in domestic depleted fields, this to remove the threatened flood of competitive oil and also to create a future military supply.

* * * *

Curtailed wildcatting in West Texas is probable. Financing of exploratory tests grows more difficult and leading operators have a backlog of proven acreage. See page 70.

* * * *

A deal soon will be consummated whereby an American company will drill 10 exploratory wells in Brazil for the Brazilian government.

* * * *

Secretary Ickes has made no plans for that Anglo-American oil pact conference in London which leads to the belief that he, like Secretary Morgenthau, may seek from Truman a clarification of his (Ickes') position, which in turn may lead to another cabinet change. If Ickes left the Interior, would that necessarily mean he was out as PAW head? Page 58.

* * * *

Pacific war oil requirements likely will prove considerably less than two-front needs, oil men believe. Under pressure, the military is reducing its estimates which are always based on maximum operation of maximum forces with a maximum margin of reserve. Peak oil demand should not continue past autumn.

* * * *

Auto production will accelerate faster than originally anticipated with prospects that new car rationing will be dropped early in '46. However it will be 2½ to 3 years before you can pop into a salesroom and drive home the latest job.

* * * *

FEA shortly will curtail its list of commodities under export control, possibly paving way for shipment abroad of production-refining equipment as domestic supplies improve. Exporters will run into shortage of cargo space, uncertain ocean shipping, credit risks, lend-lease and government training.

* * * *

Criminal anti-trust prosecutions, used at times to whip industry into line, will be dropped except where violations are criminal rather than civil. Consent decrees will still be in order, the Attorney General believing they set forth rules more clearly than court decisions.

* * * *

Bureau of Foreign and Domestic Commerce's commodity units will be changed in the fall so that business will get quickly all information gathered. Much of it now is relegated to governmental files. Page 68.

* * * *

Postwar scientific research along all lines will be pushed by Washington. Helping factor will be removal of uncertainties regarding deductibility of research and development expenditures. See page 60.

* * * *

The tin situation continues serious, supplies of pig tin having dropped 70 percent since January, 1942. For reconversion, however, there are substitutes for tin for most uses.

Export Model WELDED-IN BLADE BIT

It's the newest, most practical drag bit on the market. Blades replaced in field, without jigs, gauges or fixtures. Exclusive Hunt feature prevents error. Made in 2-blade and 3-blade types, 5-in. to 25-in. sizes. Immediate delivery, U. S. and Export. All you do is place blade in bit head and weld. Full details and prices sent upon request.

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A BUSINESS BUILT ON *Good* SERVICE

The Week's News

OIL needs of the Pacific war were discussed at the July meeting of the PIWC. Council members were told that domestic crude production would have to continue above maximum efficient rate, but were urged to plan now with state authorities for cut-backs in allowables immediately upon the end of the war to prevent development of uneconomic above-ground stocks. Story below.

Other London Oil Topics—American delegates negotiating with British officials on the Anglo-American petroleum agreement may avail themselves of the opportunity to discuss oil allocations for the liberated countries and the possibilities of concessions in Iran. Page 60.

Tidelands to States—Enactment of legislation abandoning all federal claim to underwater oil deposits was recommended by the House Judiciary Committee in a report strongly supporting the states' contention that title to the lands always has been vested in the states, and scoring government officials' claims that oil is the sole question involved. Page 62. U. S. Chamber of Commerce on mail vote, adopted a similar policy.

Manpower and Rubber—Retiring Rubber Program Director John L. Collyer reported present policies and programs adequate to supply all needed tires, provided manpower problems are licked and component supplies are increased. Page 60.

Scientific Research Plans—Postwar industrial scientific research would be spurred by amendment of tax and patent laws, and should be part of a program recommended to Congress for establishment of a National Research Foundation, according to Dr. Vannevar Bush, director of the Office of Scientific Research and Development. Page 60.

Foreign Trade Prospects—Foreign Economic Administration is disclosed to be studying the shortening of its control lists on exports, but' American industry will face many handicaps and hazards in restoring the wheels of foreign trade. Page 68.

Inland Waterways Traffic—Approximately one million barrels a day of crude and products are being hauled over the inland waterways stems which, during the first six months of this year, piled up a record of 65 billion barrel-miles, according to ODT. Page ??.

Pipe Line Authorized—The Federal Power Commission authorized United Gas Pipe Line Company to build its 143-mile, 24-inch line between the Carthage and Monroe fields, with Vice Chairman Leland Olds scoring the agility with which WPB can shift its position "when circumstances dictate." Page 66.

PAW Certifications—PAW increased Texas crude production by 10,000 barrels daily for August, setting a rate of 2,190,000 barrels, and increased output of other petroleum liquids by 3000 barrels; no changes were made in rates for California, which already is 13,000 barrels above the maximum efficient rate. For August domestic oil production will run 11,000 barrels higher daily than during July. Page 63.

Ickes Resignation?—Reports have been raised that Secretary Ickes will seek a showdown on his retention in the cabinet when President Truman returns from the Big Three meeting. Page 58.

Production Up Again—United States crude oil production continues to shoot up, another record having been established by the 4,956,445-barrel daily average for the week ended July 21. Page 63.

Helium as Ferret—The Bureau of Mines has announced tests in the use of helium gas as a tracer for the study of reservoir movements of oil, in the Elk Hills Naval Reserve. The helium content of the natural gas compressed for injection was lighted to one-tenth of one percent, but in future tests the content will be varied to determine the concentration producing best results. See THE OIL WEEKLY, June 18, Page 39.

Butadiene Plant Seized—The government last week took over for operation the Houston butadiene plant of Sinclair Rubber, Inc., labor troubles being given as the reason. Page 62.

Texas-Pacific Coast Line—Application for a crude oil pipe line from West Texas to the Pacific Coast is expected to be refused again by PAW. Page 61.

Compact Is Approved—The United States Chamber of Commerce membership poll gave its overwhelming approval to the Interstate Oil Compact and held it should have continued support. Page 61.

Congressmen Abroad—A score or more of members of the House Interstate and Foreign Commerce committee are expected to leave August 28 for an extended investigation abroad of petroleum, communications and newsprint supplies.

Bohart for McWilliams—Philip H. Bohart of Tulsa, assistant to the vice president of Gulf Oil Corporation, will become director of PAW production division next month, succeeding John R. McWilliams, who is resigning after a year's service to rejoin The Carter Oil Company, also at Tulsa. Ralph J. Schilthuis, member of the original PAW staff, resigned as assistant director of production to rejoin Humble Oil & Refining Company, Houston.

It's a "Fuel Oil War" from Now On, Dr. Robert F. Wilson Tells PIWC

Redeployment of oil for the Pacific war was the major subject of discussion at the July session of the Petroleum Industry War Council.

FPC Chairman Basil Manly and Vice-Chairman Leland Olds in discussing the forthcoming investigation of natural gas, assured the oilmen that the commission has no intention of invading the field of states' rights or of assuming control over the production, distribution or marketing of petroleum.

"From now on this is largely *a fuel oil war*," Dr. Robert E. Wilson, chairman of the committee on petroleum economics, told the meeting, pointing out that it requires about 21,000 barrels of fuel oil to deliver 100,000 barrels of gasoline from the Gulf Coast to the Pacific theatre, including the return trip of the tanker, as compared with 8000 barrels in the case of the European theatre.

"The moderate decrease in gasoline requirements is more than offset by increased requirements for diesel and residual fuel, and hence the total demand for crude and products is greater than before V-E Day," he explained.

The committee reported that crude production and other new supply, including natural gasoline, condensate and benzol, are expected to total almost 5,200,000 barrels per day during the last half of this year. Imports of crude into District 1 are scheduled to increase about 40,000 barrels daily during the first quarter of 1946 and an additional 40,000 in the second quarter, thereby reducing the drain on District 3, but this is the maximum amount of additional crude that is indicated to be available from the Caribbean area.

Probable production of Burma, Northwest Borneo and Tarakan has been added in considering available supplies outside of the United States, but production in other islands of the East Indies was not included.

That Ickes Resignation

Whether Secretary of the Interior Ickes would go to London to negotiate the new petroleum agreement with the British government, as previously announced by President Truman, was the subject of speculation in Washington last week.

While the odds still were that he would stay on to finish the job of negotiating the agreement in the framing of which he took a major part, Ickes was reported as determined to obtain a clarification of his status before he left the United States.

His resignation, submitted a few hours after Truman was sworn in, is still on the President's desk. The President's only allusion to it has been the ambiguous statement that no change in the Interior Department leadership was planned immediately, and it has been generally expected that Ickes would step down this fall, probably as soon as the Anglo-American agreement is consummated.

Reportedly, Ickes is preparing to put the question up to the President squarely as soon as the latter returns from the Big Three conference, and, if not satisfied with the reply, to ask that his resignation be accepted immediately.

Ickes will not be out of a job when he leaves the cabinet. He is known to have received a number of offers of private employment, including writing a newspaper column.

the supply and distribution of home heating oils, particularly in Districts 1 and 2.

"At Expense of Gasoline"

"Earlier Navy diesel fuel programs have resulted in substantial losses of normal production of burning oils for this winter and the operation of catalytic cracking units for the 100-octane program has further reduced kerosine and distillate fuel yields," it was stated. "Unless more crude can be obtained and run, it appears that a substantial increase in the yield of distillate fuel and kerosine at the expense of gasoline will be necessary to avert a serious situation next winter. Even this would not allow for prospective demands to offset possible coal shortages either here or in Europe."

In a long-term survey of the supply situation, carried through to June 30, 1946, the committee reported that total civilian, military and export demand reflected against the United States as part of the United Nations' requirements is in excess of the available supply, even after maximizing the supply of products from the United States and the reduction of inventories in this country to minimum operating levels, by 30,000 barrels daily for the current quarter, 129,000 barrels for the fourth quarter, 154,000 barrels for the first quarter of 1946 and 116,000 barrels for the second quarter.

However, this represents less than 2 percent of the total demands of the United Nations, and steps already are being taken toward reduction, partly through further increased output in the Caribbean and Persian Gulf areas.

Civilian gasoline requirements, including those created by the recent increase in rations, and military needs can be met by dropping of all plans to stockpile 100-octane and to reduce production rates, as outlined earlier this month by PAW.

The use of tankers in East Coast service during the period of redeployment has increased District 1 stocks, but with the new war-built facilities and the sharp reduction in offshore demand from the East Coast, the country's needs for interdistrict transportation, for the first time since the outbreak of the war, can be met without the use of tankers, it was reported. However, it was pointed out, as tankers are available it will permit reduction in the use of higher cost transportation facilities and particularly tank cars, thus helping to relieve the burden on the railroads.

On the assumption that the Pacific war will continue, that increased gasoline allocations will be maintained and that the recently revived probihition on the application of road oil will remain in effect, the committee foresaw a total demand rising from 5,378,000 barrels daily this quarter to 5,489,000 in the fourth quarter and 5,721,000 in the first quarter next year, dropping back to 5,555,000 in the second quarter. Against this, new supply, including imports which are scheduled to rise steadily throughout the four quarters from 189,000 to 269,000 barrels daily, will be 5,387,000 barrels daily this quarter, 5,354,000 barrels in the next quarter, 5,377,000 in the first quarter of 1946 and 5,366,000 in the second quarter.

"The anticipated large supply will still be inadequate to meet indicated demands," it was warned. "It will be necessary, therefore, for all districts to reduce stocks substantially in order to satisfy as much of the demand as possible."

Runs to stills are estimated at 4,884,000 barrels daily this quarter, 4,890,000 in the fourth quarter, 4,892,000 in the first quarter next year and 4,890,000 in the second quarter. The principal problems with respect to yields, it was figured, will apparently relate to Navy diesel and Navy special fuel oil, in which shortages are anticipated; kerosine also will be short, due in part to the projected demands for jet propulsion fuel, and a shift in the yields of military and civilian grades of gasoline appears to be necessary.

At the pre-council meeting of the production committee, J. W. McWilliams, in his final report as PAW director of production, warned that the present withdrawal of some 200,000 barrels daily in excess of maximum efficient productive capacity will have to be continued throughout the remainder of the war, but held that this can be done without greatly endangering the sustained productive capacity of the nation's oil fields.

At the same time, he urged that thought be given now to the problems that will arise in connection with restricting production to meet decreased requirements following V-J day, pointing out that this will require the concerted effort of both industry and state regulatory authorities if the production rates are to be reduced promptly as requirements decreases, in order to avoid unwarranted accumulation of above-ground stocks.

McWilliams expressed concern over the sudden decrease in the demand for drilling rigs which followed V-E day, and explained that investigation showed these more important reasons: (1) increased delivery of new equipment so that a large number of new rigs have been placed in operation; (2) absence of appropriate incentive because of controlled crude prices; (3) uncertainty surrounding tax problems arising out of the F. H. E. decision, and (4) substantial decrease in available development well locations under the current well-spacing restrictions. Also, he said, many operators expected a sudden decrease in demand for crude following the close of the European war.

"However," he emphasized, "it is and will continue to be necessary to produce at maximum sustainable levels in order to meet the crude oil requirements for the Japanese war. The efficient productive capacity can be maintained only if the 27,000 new wells programmed for 1945 and the 30,000 wells which will probably be needed during 1946 are drilled."

McWilliams disclosed that supplemental order No. 4 to PAO-11, covering drilling operations in California, has been revised and soon will be announced. This revision will include pools discovered since the order was last amended June 1, 1944, together with changes in the spacing requirements of other pools.

Manpower Problems

In the field of manpower, he reported that local boards have followed PAW recommendations with respect to approximately 96 percent of the 3500 certifications it issued for the deferment of production employes in the 18-29 age bracket. These certifications, he said, included 586 supervisory employes, 848 technical men, 520 drillers, 396 derrickmen, 236 mechanics, 490 welders, shooters, etc., 277 pumpers and 147 miscellaneous special clerks, auditors, warehousemen, etc.

More recently, Selective Service has requested that outstanding certifications be reduced by 2000 for all divisions, or approximately 18 percent of the 11,300 certifications made by PAW, and the production certifications now are being screened.

Considerable attention was paid to the annual additions to crude reserves as

■ CONTINUED ON PAGE 81

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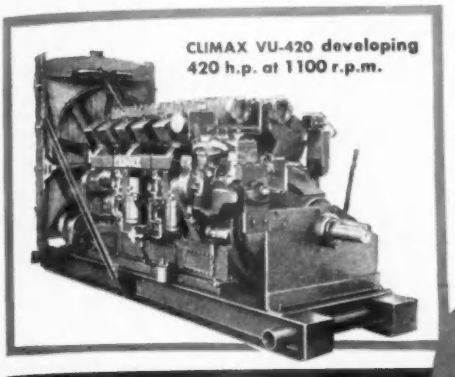

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Wants to Amend Laws so Industry Will Push Research With More Zeal

Establishment by Congress of a National Research Foundation to promote a national policy for scientific research and scientific education was proposed last week by Dr. Vannevar Bush, director of the Office of Scientific Research and Development, in a report to President Truman.

Special attention was paid by Bush to the need for expanded industrial research, both because of its benefits in increased employment and other advantages to the country and because of its proven value in the field of national security.

While the foundation (to cost $35 million per year initially with more needed when it gets under way) would give an impetus to industrial research, Bush said that if industry is to play a major role the laws relating to both taxation and patents would have to be amended.

"Uncertainties as to the attitude of the Bureau of Internal Revenue regarding the deduction of research and development expenses are a deterrent to research expenditure," Bush said. "The Internal Revenue Code should be amended to remove such uncertainties.

Patent Law Criticism

"Also, uncertainties in the operation of the patent laws have impaired the ability of small industries to translate new ideas into processes and products of value to the nation. These uncertainties are, in part, attributable to the difficulties and expense incident to the operation of the patent system as it presently exists. Certain abuses, which have appeared in the use of patents should be corrected. They have led to attacks which tend to discredit a basically sound system."

Bush pointed out that while most of the war research has involved the application of existing scientific knowledge to the problems of war, rather than basic research, there has been accumulated a vast amount of information relating to the application of science to particular problems, much of which can be used by industry. Some of this information must remain secret, he admitted, but urged that most of it be made public as soon as possible.

Topics Other Than Pact To Be Talked in London

Discussions between United States and British oil officials next month may go beyond the negotiations of the Anglo-American petroleum agreement for which the Washington delegation will go to London.

Three probable subjects of discussion likely to be raised are the making of provision for immediate accession to the pact by other countries which may desire to participate in the formation of the international commission which it sets up; programming of oil supplies for liberated countries, and American concessions in the Iranian fields.

Top members of the United States delegation will be Secretary Ickes, Deputy Petroleum Administrator Davies, and State Department Petroleum Adviser Charles Rayner.

Following perfection of the Anglo-American agreement, it is believed technical members of the two staffs will get together to work out the pooling of resources for allocation to liberated countries, while the higher officials undertake negotiations with the Iranian government, despite the latter's suggestion some time ago that it wished to wait until six months after the European war before talking about concessions. If concessions can be arranged now, delay will be minimized in preparing for development, providing work and revenue for Iran during the difficult transition period foreseen for the Middle East.

Acting on suggestions reportedly made by members of the Senate Foreign Relations Committee who were concerned over the failure to include Russia in the original pact talks, the United States delegation is expected to propose that the Anglo-American agreement be so phrased as to permit other countries to adhere immediately, instead of requiring them to wait upon congressional ratification.

Rubber Status Outlined As New Director Named

Another turnover in administration of the rubber program was announced last week, with Robert S. Wilson, vice president of the Goodyear Tire and Rubber Company, succeeding John L. Collyer, president of the B. F. Goodrich Company, as special director of WPB rubber programs.

Collyer reported that military and minimum essential civilian requirements can be met during 1945 and 1946 through the programs and policies in effect provided problems of manpower and components supply, particularly textiles, can be solved.

Major obstacle to the attainment of 1946 production objectives is natural rubber. To meet the drain on the limited stockpile, expected to drop to 66,000 tons by the end of the year, Rubber Reserve Company is arranging to harvest the entire U. S. guayule acreage by April, 1947, and Rubber Development Corporation is extending its contracts with rubber-producing South and Central American countries beyond the original 1946 termination.

Greatest hope for essential natural rubber supplies some months hence lies in the prompt liberation of Far Eastern producing territories. Large truck tires is the most critical current shortage.

Hope to Sell Surpluses Abroad to Manufacturers

Manufacturers of products declared surplus by the Army and Navy in the Mediterranean, European and other theatres of war will be permitted to buy their products back for re-sale abroad if the necessary arrangements can be worked out with foreign governments, it was disclosed last week by Thomas B. McCabe, Army-Navy liquidation commissioner.

All surpluses, other than strictly military equipment will be disposed of abroad, if possible, but in such way as not to injure either our domestic or export market, it was assured.

Discussing the problem of disposing of war surplus located outside the United States in a report to W. Stuart Symington, new chairman of the Surplus Property Board, McCabe said that first priority on purchases is held by agencies assisting in the recovery and rehabilitation of the devastated countries, with second preference going to American religious, educational or philanthropic institutions abroad.

"We also want to contribute, if possible, to more jobs by helping American companies build up their foreign markets," he said. "To accomplish this, American firms have been given the opportunity to re-buy trade-marked products so that they will be in a position to protect their brands and to repair, service and distribute their merchandise in an orderly fashion. Such resale agreements still have to be worked out with foreign governments."

Oil Surpluses Sold

Petroleum products declared surplus by government agencies and made available for sale since the beginning of the disposal program represented an acquisition cost of $1,173,462, RFC reported last week.

Sales up to May 15, last, were reported as $86,059, received for products costing $346,686.

The RFC report showed acquisitions of gasoline and liquid hydrocarbons costing the government $305, none sold; naphtha, solvents and finished light products aggregating $27,883, of which products costing $9422 were sold for $7444; kerosine amounting to $934, of which $192 worth was sold for $181; fuel oils costing $1659, of which $843 worth was sold for $657; lubricating oils and greases amounting to $899,103, of which $149,051 worth was sold for $61,959, and petroleum asphalts and road oils costing $12,638, with no sales.

Graham Succeeds Brown

PAW announced that James H. Graham of Tulsa, assistant director of the natural gas and natural gasoline division for District 3, Houston, has been appointed director, succeeding Henry Brown, who resigned several months ago, and Louis I. Mistrot, who has served as an analyst since September, 1943, has been named assistant director.

PIWC Meeting

■ CONTINUED FROM PAGE 58

computed by PAW, in comparison with the API calculations, the former estimating the ultimate recovery expected from new fields and pools discovered by exploratory drilling each year and the latter combing exploratory and development drilling to estimate proven additions to reserves. It was suggested that the PAW basis might be continued after the war possibly by the American Association of Petroleum Geologists or the API itself.

Discussing the materials situation, McWilliams reported that steel requirements for the fourth quarter of this year will be 327,500 tons or carbon and 55,000 tons of alloy, reductions from third quarter requirements of 13,500 and 2200 tons, respectively, in line with programmed reduction of well completions from 7200 to 6900.

Fourth quarter requirements include 287,000 tons of oil country tubular goods for domestic operations. Foreign requirements will be 42,605 tons, making a total of 329,605 tons, against mill capacity for PAW of 278,000 tons. There is also 5000 tons of capacity for lapweld pipe which brings the maximum available tonnage for oil country tubular goods up to 283,000 tons.

There will, he said, be a deficiency of 46,605 tons, which will have to be filled from inventory, as is being done this quarter.

Materials Situation

Discussing the matter in more detail, Edward E. Robbins, PAW director of materials, reported that it is expected that the space directives on the mills will remain for the fourth quarter in approximately the same proportions as currently. WPB, he said has indicated that allotments of material will be made to claimant agencies on the general basis of third quarter allocations, but the policy beyond the fourth quarter will largely depend on the development of the materials situation.

Estimated lumber production for the fourth quarter is 8,500,000 board feet less than in the third quarter, but industry requirements will remain at current levels, indicating that the situation will be tighter.

Pipe and tubing for refining operations still presents a problem, with promises from mills still running from 90 to 120 days, and all emergency requirements are obtained by directives, Robbins said. Structural steel has eased somewhat, but it still takes a minimum of 60 days to get structural shapes from the mills.

The copper situation is showing improvement and no particular difficulties are foreseen after this quarter, but it will continue under allocation and difficulties may be experienced in some individual copper shapes.

The program of 260,000 heavy duty tires per month for the third quarter is expected to take care of requirements, but the effect of recent interruptions to production caused by labor difficulties has not yet been evaluated. The truck situation was reported as good, due to cutbacks in the Army program which gave petroleum a few original trucks.

Anticipated June production of tool joints was 45,445, and May production of rock bits was about 24,000, with future output of both expected to continue at those levels.

Internal combustion engines for petroleum operations continue to be a problem, but there has been a slight improvement in the shipment of drilling engines. The container situation is critical and may remain so for some time.

Appointment of H. L. Thatcher, Chattanooga, Tennessee, as an ex-officio member of the council to succeed the late Phil Williams was announced by Deputy Administrator Davies. Thatcher is chairman of the National Council of Independent Petroleum Associations, a post in which he also succeeded Williams. He is president of the Thatcher Oil Company, Chattanooga, Tennessee.

The next meeting of the council was set for September 26.

Expect Refusal of Line From Texas to Pacific

Application of Pacific Emergency Pipe Lines, Inc., for authority to construct a 20-inch pipe line from West Texas to California, rejected by PAW last year, is expected again to be turned down on the basis of a report prepared by the District 3 Supply and Transportation Committee.

The committee reportedly has held that only in the event that the military authorities believe they will need a movement of crude from West Texas to the Pacific Coast more than a year from now and in the further event that crude oil is not available from some other source, such as South America, can a line be justified, and then only to the extent of a 14-inch line.

PAW officials concerned with the matter refused to comment on the situation, other than to say that a report had been received from the district committee and was being studied, together with the testimony adduced at the hearings held last month, and that no decision has yet been reached.

Immediate Corporation Tax Relief Voted by Congress

Legislation providing immediate tax relief for corporations was enacted by Congress last week, increasing the specific exemption from the excess profits tax from $10,000 to $25,000, effective January 1, and providing for application of postwar credits against the September 15 and subsequent installment payments of the tax.

Interstate Oil Compact Approved by Chamber Vote

By a vote of 2592 to 11, the United States Chamber of Commerce last week gave its approval to the Interstate Oil Compact, as clearly showing "the value of state compacts as a means of conserving valuable resources and contributing greatly to the public welfare" and held that it should have continued support.

The compact was one of 36 subjects touched upon in a mail ballot of member organizations necessitated by the calling off of the annual convention scheduled for last May.

The chamber membership, by a vote of 2695 to 4, called for revision of federal fiscal policies to balance the budget, relieve, if not abolish, the double taxation of corporate income and dividends and make other improvements in the revenue law.

By a vote of 2727 to 20, it called for abstention by the government from entering any field of business which can successfully be conducted by free enterprise and, 2609 to 61, opposed government favoritism to cooperatives. Taking up the question of state rights, the chamber voted, 2693 to 19, that it is a cardinal principle that all rights not specifically granted to the federal government are reserved to the several states and charged that this principle in recent years has been increasingly infringed by federal encroachment in almost every field.

Continuation of Pressure Maintenance Is Ordered

The Texas Railroad Commission last week moved to invoke the authority accorded to it under the decision in the Corzelius case. In an order affecting the Agua Dulce and Stratton fields, the commission required the continuance of a pressure maintenance program by The Chicago Corporation and Gulf Plains Corporation. Three reservoirs were excepted from orders issued in December, requiring pressure maintenance in 12 reservoirs in the field. The new order became effective July 16.

The commission did not attempt to require the cycling of gas in these reservoirs but rather its orders are based on the need for pressure maintenance in nine of the reservoirs as a means of preventing retrograde condensation.

The commission decided this retrograde condensation would result in physical waste of recoverable liquid hydrocarbons, which could be avoided if the pressure maintenance program was continued. It pointed out that cycling plants also exist in this field, which are capable of maintaining pressures in these various reservoirs, and that therefore, exceptional expense involved in the installation of such units was unnecessary.

Federal Claim to Tidelands Would Be Relinquished by Sumner Resolution

Enactment of legislation relinquishing all federal claims to tideland oil deposits was recommended to the House of Representatives last week by its judiciary committee. The committee reported a resolution introduced by Representative Sumners of Texas, its chairman, out of more than a score of measures introduced.

The Sumners resolution recognizes that the titles of the several states to lands beneath tidewaters and lands beneath navigable waters vested in the respective states on July 4, 1776, or upon their formation and admission to the Union and renounces and disclaims any right, title or interest of the United States in and to such lands. Releases and quitclaims to all right, title and interest to (1) each of the respective states; (2) the grantees or successors in interest of each state (which includes all those who have acquired title by operation of state law); and (3) others who have title which has been confirmed by official action of the United States. The last is to apply to persons who received grants from former governments prior to the formation of the state, but only if such prior grants have been confirmed by the United States.

The only exception from the release and quitclaim is with respect to any and all lands beneath tidewaters or navigable waters which have been acquired by the United States by cession or other transfer from a state or from the grantees or successors of a state or by condemnation.

Legal Background

The committee held that the 13 original states, when they achieved their independence, became, as successors of the Crown of England, the absolute owners of all lands beneath tidewaters and navigable waters within their respective boundaries, except those previously granted by valid grant of a former sovereign, and that these lands have never been surrendered to the federal government. All new states are on the same footing.

The committee held that there is no valid legal theory upon which federal ownership of the submerged petroleum deposits can be claimed without claiming ownership of the lands within which they lie, and stated there is "no justification for the federal claim to oil in submerged lands."

Discussing assertions of Secretary Ickes and others that the federal claims relate only to oil, the committee pointed out that only four of the 22 coastal states are now producing from offshore lands—California, Texas, Louisiana and Mississippi.

"These states have leased their tidelands to private lessees who have invested large sums of money therein in reliance on the rule of property above set forth," the report stated. "Oil has been produced for long periods, without question by federal officials prior to 1937 . . . There is no justification for the assertion by the federal government of a claim to the submerged lands of those states which produce oil therefrom, any more than the submerged lands of any of the other states. Nor is there any more basis for claiming oil than for claiming coal, iron or oysters or shrimp. The evidence before the committee is that these oil-producing states are administering their submerged lands in accordance with state laws and that the proceeds from the state leases are used for public purposes within the state."

Criticizes Suit

The committee also criticized the action of the Department of Justice in bringing suit to obtain lands of the Pacific Western Oil Corporation.

"The highest court in the land has already passed upon these questions numerous times," it said. "There is no certainty that another decision would be accepted as final by those who continue to agitate this question. Furthermore, the litigation recently filed would undoubtedly not settle the question but would be only the beginning of litigation which might last for many years. In the meantime, needed developments both in ports and harbors and elsewhere in the coastal and submerged lands would be definitely retarded."

Conclusions of the committee are:

"(1) The enactment of the proposed legislation will not divest the United States of any property right to which it has any legitimate claim, or of any land in which it has any legal interest.

"(2) The question whether the agitation over long-recognized state titles should be set at rest in the manner proposed is a question of congressional policy.

"(3) This legislation is necessary to remove the cloud which has been cast upon the titles of enormously valuable lands throughout the United States and to prevent the similar clouding of these titles in the future."

The committee pointed out that substantially similar legislation has been introduced in the Senate by Senator Pat McCarran of Nevada.

No action by the House will be taken before October, when it reconvenes.

Gas Injection Hearing Set For West Pampa Field

The Texas Railroad Commission will consider an extensive gas injection program for the West Pampa area of the Texas Panhandle August 7. The commission will hear evidence relating to the special rules allowing conversion of some producing wells to injection wells and the transfer of their allowables to other wells on the lease. A general program for handling this production will be discussed.

Government Will Operate Sinclair Butadiene Plant

Acting on order of President Truman, Administrator Ickes on July 19, took possession of the Sinclair Rubber, Inc., butadiene plant at Houston.

Ickes' instructions came from Potsdam, Germany, where President Truman found there was a "real, substantial and immediate emergency in the form of a threatened interruption of the butadiene plant as a result of a labor disturbance."

Announcement of the seizure was made by Deputy Administrator Davies, who emphasized that the sole purpose was to keep the plant in continuous operation so as to avoid interruption in meeting the demands of the fighting forces.

The plant is operated for the production of butadiene for the account of the Reconstruction Finance Corporation as part of the government's synthetic rubber program. It is owned by RFC and leased to Sinclair Rubber, Inc. The plant includes certain power, water and other auxiliary facilities that are used to service the adjacent government-owned copolymer plant, which is owned by Goodyear Synthetic Rubber Corporation. (A wholly owned subsidiary of Goodyear Tire and Rubber Company) for the account of RFC.

Penn Grade Undertakes Further Research Tasks

The Pennsylvania Grade Crude Oil Association has expanded its production research program to provide for a study at St. Bonaventure College near Olean, New York, of Bradford oil sands for the purpose of determining oil sand pore size and pore size distribution, together with the reaction of various kinds of water upon clays. Information is sought on the proper type of flood water for use in Bradford secondary recovery operations and to learn why a high residual oil content remains in water-soaked sands.

The pore investigation will be conducted under direction of Professor John Worden and the clay problem will be supervised by Professor Harold Tormey.

Other research studies sponsored by the Penn Grade group currently are:

Battelle Memorial Institute is working on causes of corrosion in the tubular equipment of air-gas drive producing wells near Oil City and is seeking means of combating it. Waters, oils and gases produced by corrosive and non-corrosive wells are being analyzed.

An arrangement with the U. S. Bureau of Mines is seeking to speed up experimental work on flowing of producing wells in the air-gas drive area.

The association's Bradford laboratory is concentrating on learning the effects of water velocities upon oil recoveries and residual oil saturations in long consolidated sand cores. The St. Bonaventure study will supplement this work.

All phases of the research are part of a $300,000 program launched last fall.

Texas Production for August Slated For 10,000-Barrel Increase by PAW

Domestic crude production in August will run 11,000 barrels daily higher than for the current month, it was disclosed at the week's end by new PAW certifications. Production of other liquids will be increased by 5900 barrels daily.

PAW certifications call for a daily production of 4,900,900 barrels of crude and 339,100 barrels of natural gas and condensate.

Texas crude production will be upped 10,000 barrels daily in August with a 3000 barrel increase in other petroleum liquids, under a PAW certification of a production rate of 2,356,000 barrels daily of all petroleum liquids. All of the additional crude will come from the West Texas fields, while the increase in other liquids is expected from new natural gasoline plants going on stream.

Military Needs Increase

Deputy Administrator Davies emphasized that increased military requirements for fuel oil make it necessary that "every barrel that can be produced within sustainable production rates be made available."

"Since crude-oil stocks have been reduced to practicable minimum working levels in the Southwest," Davies said, "the supply of crude oil needed to meet programmed refinery runs must come almost entirely from current production. It has been necessary, therefore, to increase the production certification to provide the added supply of West Texas type crude programmed for refinery utilization during August."

PAW announced that no change would be made in California production, now certified for 952,000 barrels of crude and 60,900 barrels of natural gasoline and condensate daily, which is 13,000 barrels in excess of maximum efficient rate.

It was explained that, on a world-wide basis, the products-supply situation, particularly fuel oil, is such that continued operation of all Pacific coast refineries at maximum capacity is essential, but while at the moment there is a slight surplus in tanker transportation, there is not enough crude available in any of the principal producing areas throughout the world to afford an additional supply for California beyond that already programmed, according to excessive production will have to be continued.

Allotments by States

Aside from Texas the only change in crude allocations was for New York, increased from 12,000 to 13,000 barrels daily.

PAW's August certifications for the individual states are as follows: New York, 13,000 barrels daily; Pennsylvania, 37,000; West Virginia, 8200; Illinois, 200,000; Indiana, 13,000; Kansas, 274,000; Kentucky, 28,000; Michigan, 47,000; Nebraska, 10,000; Ohio, 7000; Oklahoma, 380,000; Alabama, 500; Arkansas, 80,000; Louisiana, 360,000; Mississippi, 53,000; New Mexico, 105,000; Texas, 2,190,000; Colorado, 12,000; Montana, 22,000; Wyoming, 118,200; California, 952,000.

Estimates for natural gasoline and condensate are as follows:

Pennsylvania, 800 barrels daily; West Virginia, 5000; Illinois, 12,000; Kansas, 4500 (up 400); Kentucky, 2600 (up 400); Michigan, 800 (up 100); Ohio, 500 (down 100); Oklahoma, 28,000; Arkansas, 5400 (up 400); Louisiana, 42,000 (down 500); New Mexico, 6800 (up 1800); Texas, 166,000 (up 3000); Montana, 300; Wyoming, 3500 (up 400); California, 60,900.

Production Record

During the week ended Saturday, July 21, another high mark was established when average daily crude oil production reached 4,956,445 barrels. This is nearly 40,000 barrels in excess of the previous record of 4,918,140 barrels established the week ended July 14.

Since January 1, the daily average production for United States fields has increased almost a quarter of a million barrels.

Principal gains registered during the past week came from California up 7000 barrels, Wyoming up 5050, Kansas up 4650, Illinois up 3800, Montana up 2105, and Oklahoma up 1000.

See table below:

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED July 21	July 14
Alabama	950	750
Arkansas	80,200	80,000
California	950,200	943,200
Colorado	10,700	10,900
Florida	250	250
Illinois	204,400	200,600
Indiana	12,900	11,050
Kansas	282,350	277,700
Kentucky	30,400	30,000
Louisiana	367,550	366,600
North Louisiana	70,700	69,750
South Louisiana	296,850	296,850
Michigan	53,900	49,100
Mississippi	52,300	51,800
Missouri	100	100
Montana	23,510	21,405
Nebraska	900	900
New Mexico	104,100	104,100
New York	13,550	12,750
Ohio	6,250	6,000
Oklahoma	390,750	389,700
Pennsylvania	37,550	34,500
Tennessee	35	35
Texas	2,209,350	2,209,350
Upper Gulf Coast	568,900	568,900
East Texas Field	379,500	379,500
Rest of Eastern Texas	139,050	139,050
Lower Gulf Coast	255,400	255,400
Southwest Texas	83,750	83,750
South Central Texas	21,500	21,500
West Texas	521,400	521,400
North Texas	152,350	152,350
Panhandle	87,500	87,500
West Virginia	8,900	7,050
Wyoming	115,350	110,300
Total United States	*4,956,445	4,918,140

* New all time peak.

Proration Order Issued By Texas After Hearing

The August proration order issued last week by the Texas Railroad Commission provides for a net allowable of 2,347,606 barrels of crude oil daily. The commission estimated that there would be 6.5 percent under-production amounting to 152,594 barrels per day or a net production of 2,195,012 barrels. In addition the commission estimated production of 165,759 barrels of distillate and natural gasoline, bringing the total production of all oils to 2,360,771 barrels, or 4771 barrels in excess of the July allowable.

The allowable for Sulphur Bluff was raised from 3513 to 3889 barrels per day. Talso was raised from 19,443 to 24,987 barrels per day.

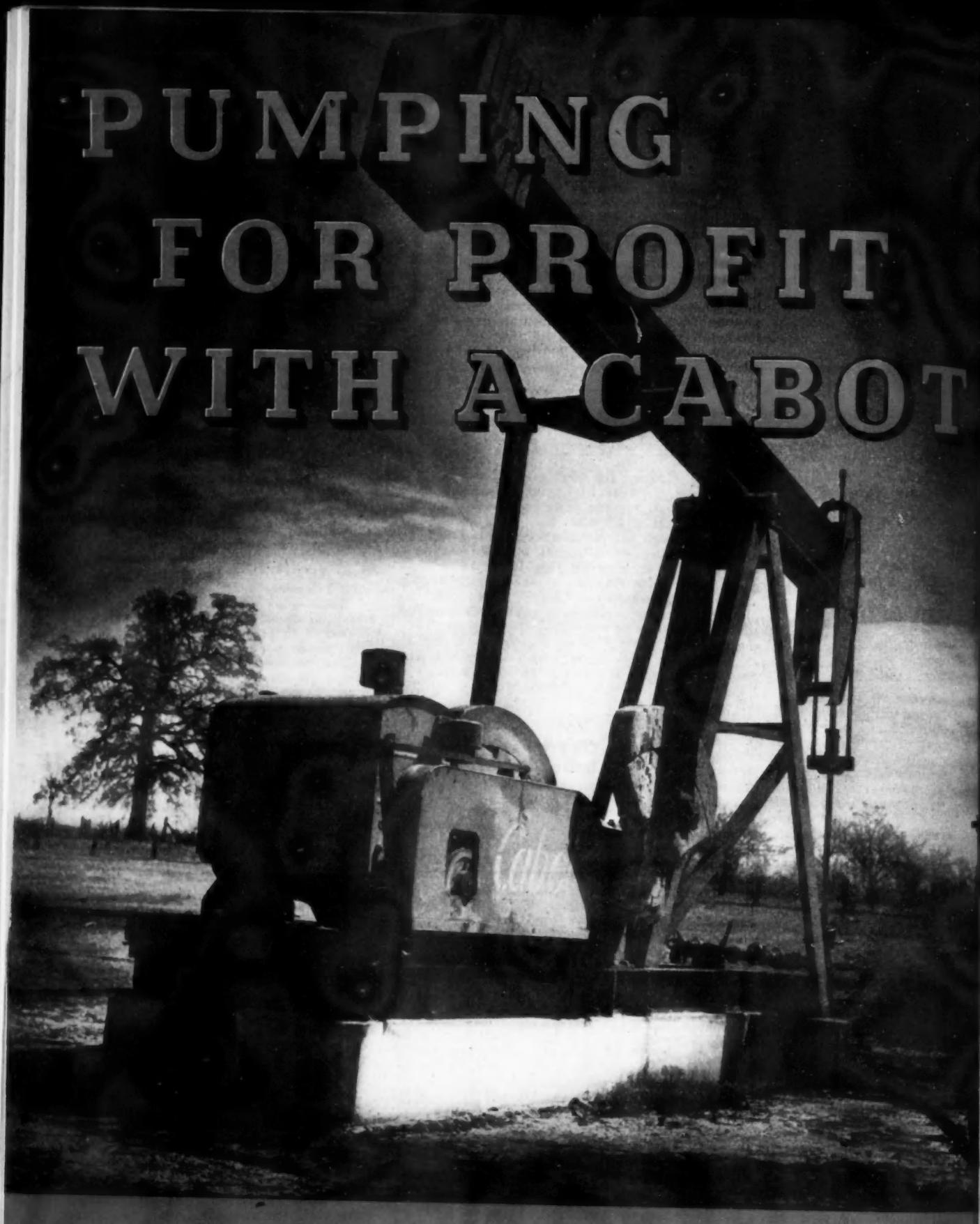
Most fields were scheduled to produce 26 days during August but East Texas is to produce 25 days only. The Panhandle is exempt from shutdown.

The commission reported a 5.52 increase in the average pressure in the East Texas field on July 1, this, despite the production of an average of 381,974 barrels daily during June.

Inland Waterway Movement Of Oil Continues Heavy

Approximately a million barrels of crude and products daily is being handled over the inland waterways system, which during the first six months of this year piled up a record of 65 billion barrel-miles, ODT reported July 17. An even greater volume is indicated for the final half of the year.

Lawrence C. Turner, ODT director of waterways transport, listed these major current petroleum movements: More than 30,000 barrels daily of 100-octane gasoline from Midwest refineries to Gulf Coast consuming areas; 12,000 barrels of products from New Orleans, Baton Rouge and Helena, Arkansas, up the Mississippi and Ohio rivers to Steubenville, Ohio, for pipe lining to Baltimore and Washington; 50,000 barrels pipe lined from Texas refining centers to Helena, Arkansas, barged upstream to Ohio and Mississippi river terminals; 28,000 barrels of crude barged to the Southeastern pipe line at Port St. Joe, Florida, for Atlanta, Knoxville and adjacent points, and 27,000 barrels of gasoline from Texas refineries barged along the Gulf Intracoastal Canal, for piping across Florida to Jacksonville, where it is picked up by barges and moved up the Atlantic Intracoastal Waterway as far north as Wilmington, North Carolina. Oil is also picked up from the Big Inch pipe line and products from the Little Big Inch at New York for barge delivery to New England refineries and distribution plants.



JONES & LAUGHLIN SUPPLY COMPANY

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TULSA, OKLAHOMA

J&L STEEL

Crude Production Hovers Near 5 Million Barrels Daily in Establishing New High

Production of crude oil in the United States climbed close to 5 million barrels daily in setting a new record in the week ended July 14, and although refinery runs of crude declined they still were not far short of 5 million barrels daily, a mark they have exceeded slightly in two recent weeks.

By virtue of the high levels of these operations, refinery output of major products remained exceptionally great, and there were substantial additions to stocks of residual fuel oil and distillate fuel oil, while the volume of gasoline taken from storage was not above normal for the season.

U. S. crude production averaged 4,944,000 barrels daily, up 58,000 from the previous week and 41,000 above the previous record high set in the final week of June. The output was 342,000 barrels a day or 7.4 percent larger than that of 4,602,000 daily in the corresponding week last year. Crude runs to stills averaged 4,945,000 barrels per day although down 61,000 from the week before, the new figure having been 1000 barrels a day in excess of domestic production, in spite of the production increase. The runs were 357,000 barrels a day or 7.8 percent above those of 4,588,000 daily in the week ended July 15 last year. Crude oil stocks were heavily reduced in the week ended July 7, the Bureau of Mines reported, having come down 3,531,000 barrels to a new 23½-year low of 217,250,000 barrels. The lowest point previously reached since December, 1921, was 218,675,000 barrels March 3 this year. The new total was 9,174,000 barrels or 4 percent less than the 226,424,000 barrels held a year previously.

Gasoline production of 15,349,000 barrels in the week ended July 14 was 267,000 more than in the previous week and 1,326,000 barrels or 9.5 percent more than was produced in the week ended July 15 last year. Stocks of finished and unfinished gasoline were lowered 928,000 barrels during the week, having declined to 85,401,000 barrels, although that amount was 4,547,000 barrels or 5.6 percent more than the 80,854,000 barrels held a year before. The reduction was predominantly the drawing on civilian grade stocks. Those stocks came down 821,000 barrels to 46,079,000 barrels, which amount compared with 45,315,000 barrels held a year previously. Military and other grades were taken from storage during the week in the amount of 107,000 barrels, as stocks declined to 39,322,000 barrels, compared with 35,539,000 barrels held on the corresponding date last year.

Gas oil and distillate fuel oil production of 5,197,000 barrels was 322,000 barrels more than in the previous week and 336,000 barrels or 6.9 percent more than in the corresponding week last year. Stocks were increased by 1,137,000 barrels and rose to 34,804,000 barrels. That quantity was, however, 2,103,000 barrels or 5.7 percent less than the 36,907,000 barrels held July 15 last year.

Residual fuel oil production totaled 9,337,000 barrels, up 99,000 from the week before and 891,000 barrels or 10.5 percent more than production in the corresponding week last year. Stocks were increased by 735,000 barrels in rising to 41,489,000 barrels. But that amount was 13,315,000 barrels or 24.3 percent less than the 54,804,000 barrels reported as of July 15 last year.

Standards Listed

American Standards Association, New York, has published a new list of all approved American Standards and War Standards.

Approximately 800 standards are listed in the booklet, covering specifications for materials, methods of tests, dimensions, definitions of technical terms, procedures, etc., in the electrical, mechanical, building, transportation, textile, and other fields. For ready reference, the standards are listed alphabetically as well as by engineering fields.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11-22	4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	4,337	2- 7	3,961	1- 3	263,208	3-28	[1]109,281	3-14	47,861	11-14	95,857	1- 8
1943	4,436	11-13	4,331	12- 4	245,752	5-29	94,159	3-20	47,187	11-27	72,881	1- 2
1944	4,762	9-30	4,798	12-30	240,992	1- 1	89,162	4- 1	48,863	10-28	64,744	10- 7
1945	[1]4,944	7-14	5,006	7- 7	224,079	6- 2	99,012	3-24	38,298	1- 6	56,074	1- 6
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 3
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,382	4-12	90,914	7-13
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,579	3-18	232,191	1- 9	68,182	10-16	30,732	4- 3	57,596	12-25
1944	4,357	1- 1	4,228	2-12	220,258	9- 9	76,302	1- 1	30,232	4-19	49,737	3-18
1945	4,678	1- 6	4,656	1- 6	[4]217,250	7- 7	85,401	7-14	26,483	3-17	38,548	5-26

TRENDS OF 1944 AND 1945

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,380
January 29	4,400	4,359	240,251	13,427	81,075	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,018	51,669
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,342	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,839
September 30	4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14,117	79,058	4,772	48,705	8,985	64,382
December 2	4,712	4,693	221,591	14,853	80,427	4,082	45,832	8,981	61,727
December 9	4,704	4,552	220,258	14,611	80,880	4,056	44,430	8,923	60,458
December 16	4,695	4,537	220,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,651	9,252	51,119
February 24	4,777	4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 28	4,805	4,780	223,474	14,633	94,068	4,636	28,273	9,379	39,813
May 26	4,887	4,950	222,831	15,194	89,121	4,667	29,184	9,670	38,548
June 2	4,859	4,804	224,079	15,317	88,696	4,857	29,819	9,437	39,022
June 9	4,853	4,827	221,552	15,256	87,896	4,842	30,339	9,382	38,996
June 16	4,888	4,915	221,932	15,132	87,504	5,342	30,397	9,252	39,482
June 23	4,898	5,002	220,974	15,367	87,462	5,014	31,761	9,558	39,893
June 30	4,903	4,999	220,781	15,546	86,472	4,910	32,213	9,077	40,488
July 7	4,886	[5]5,006	217,250	15,082	86,329	4,875	33,667	9,238	40,754
July 14, 1945	[1]4,944	4,945	.....	15,349	85,401	5,197	34,804	9,337	41,489
July 15, 1944	4,602	4,588	[5]226,424	14,023	80,854	4,861	36,907	8,446	54,804
Change:									
In week	+58	−61	−3,531	+267	−928	+322	+1,137	+99	+735
In year	+342	+357	−9,174	+1,326	+4,547	+336	−2,103	+891	−13,315
In year	+7.4%	+7.8%	−4.1%	+9.5%	+5.6%	+6.9%	−5.7%	+10.5%	−24.3%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, July 8, 1944.

Work Begins on United's 143-Mile Gas Line After Go-Ahead Is Given by FPC

Construction has been started by United Gas Pipe Line Company on a 143-mile, 24-inch gas line from the Carthage field, Panola County, Texas, to a point of connection with the Tennessee Gas and Transmission Company's 24-inch line at Monroe, Louisiana, and from there to a connection with United's existing facilities in the Monroe gas pool.

The company also will lay 4½ miles of 18-inch line from the Chicago Corporation's gasoline plant in the Carthage field to a point of connection with the proposed new line.

Authorization for construction was granted by the Federal Power Commission July 16. The project will cost an estimated $7,261,000.

The company is authorized to operate the line, which will have a capacity of 310 million cubic feet daily, to transport for the Tennessee company a maximum of 114 million cubic feet a day from the Carthage field to the Tennessee compressor station at Monroe, and to transport during the war emergency period a maximum of 65 million cubic feet daily for service to United's present customers.

Other Facilities

United also is constructing a field gathering system and a gasoline and dehydration plant in the Carthage field at an estimated initial cost of $3,704,000, and additional field gathering facilities are to be constructed during the second year of operation of the project at an estimated cost of $926,000.

In a concurring opinion, Vice Chairman Leland Olds, who dissented from a decision of the majority to authorize a 60,000,000 cubic foot expansion in the daily capacity of the Tennessee line, held that the construction of the Carthage-Monroe line "should contribute to the more orderly and economical utilization of the remaining reserves in the Monroe field as well as those of the Agua Dulce field and the numerous smaller fields which are interconnected with the Monroe and Carthage fields by existing or authorized pipe lines.

"Furthermore," he said, "the proposed line, if its use is limited to making good deficits of Monroe gas in relation to present requirements of existing purchasers, will provide some leeway for orderly consideration of the question whether the public interest may not require progressive reduction in the high percentage of boiler fuel use now characteristic of the market presently served by the Monroe field."

Olds gave little weight to the War Production Board's finding of war need for both the expansion in the capacity of the Tennessee line and the construction of the United line, suggesting that "judicial notice can be taken of the agility with which the board can change its mind on war need when circumstances dictate."

Reversal Noted

He referred to the action of the board, which some months ago recommended transfer of a 35,000-kilowatt turbo-generator from the Lake Charles, Louisiana, magnesium plant to the Lake Catherine, Arkansas, aluminum plant. After several hundred thousand dollars had been expended on the transfer, the board reversed itself, he said.

The FPC has scheduled a hearing for August 15 on the application of the Kansas-Nebraska Natural Gas Company's application for authority to construct about 20 miles of 12¾-inch line to reinforce its present system in Phillips and Rooks counties, Kansas, install two 1000-horsepower compressor units at its Scott City station, and move a 250-horsepower compressor station from Elm Creek, Nebraska, to Holdrege, Nebraska, at a cost of $410,000.

Stanolind Accepting Bids on 95 Miles of Wyoming Lines

Stanolind Pipe Line Company, Tulsa, will receive bids July 23 for the laying of 68 miles of 8-inch; 5 miles of 4-inch and 22 miles of 6-inch crude oil lines at Wind River, Wyoming, including the laying of an 8-inch line from Steamboat to Lysite, Wyoming. Contract is to be awarded about July 25, with construction work to get under way immediately thereafter.

Gulf Puts 8-Mile, 4-Inch East Texas Line Into Use

Gulf Refining Company has placed into operation an eight-mile, four-inch pipe line from the Pickton field, Hopkins County sector of East Texas, to Gulf's Mid-Continent-Port Arthur system near Winnsboro.

Construction of the line was by Sharman & Allen, Houston contractors.

East Kansas Oil and Gas Production Summarized

In a summary of oil and gas production in eastern Kansas, J. M. Jewett and G. E. Abernathy of the State Geological Survey, University of Kansas, revealed that 27 Kansas counties in that area produced 16,250,000 barrels of oil and that 26 counties produced 12¼ billion cubic feet of gas during 1943. The report, entitled Bulletin 57, indicated that Butler County leads all others in the eastern district in oil production with 4½ million barrels in 1943 and 4.7 million barrels in 1944, followed by Cowley, Marion and Neosho counties.

Montgomery County led all eastern Kansas counties in gas production with an output of nearly 3¼ billion cubic feet in 1943. Other eastern counties that produced in excess of 500 million cubic feet during that year included Jefferson, Chatauqua, Allen, Elk and Neosho.

Atlantic's Shipments from Midland to Coast Show Gain

Rail shipments of Permian basin sour crude from the Midland, Texas, rack of The Atlantic Pipe Line Company to refineries in California averaged 31,445 barrels daily during the week ending July 15 as compared to a daily average of 27,755 barrels to 9 plants the preceding week.

Allowable production of West Texas fields was increased July 1 to permit the delivery of 46,000 barrels daily allocated by PAW to the West Coast plants. The excess is being accumulated in tanks near Midland until the railroad facilities can be expanded to handle the set quota.

Oklahoma Allowables to Be Fixed in Hearing July 31

Oklahoma State Corporation Commission will consider market demands and fix the state and pool allowables for August and September in a hearing July 31 at 10 a.m. in Oklahoma City.

Other hearings announced by the commission include application of Hanlon-Buchanan, Incorporated et al for a salt water disposal well in the West Stillwater pool, Payne County, July 26; allocation of gas production in the West Cement Medrano pool, Lower Charlson sand of the Chickasha pool and Guymon-Hugoton pool for August and September, July 31; fixing a maximum gas-oil ratio for the East Pauls Valley pool and establishment of rules and regulations governing the Marchand sand of the East Cement pool, July 26.

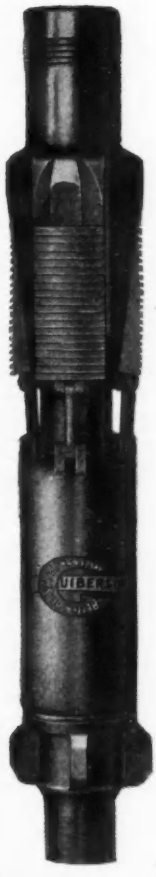
International Petroleum Officers, Directors Named

Changes in directorate and officers of The International Petroleum Company, Ltd., were made at the general meeting of shareholders and subsequent meeting of directors in Sarnia, Ontario. R. V. LeSueur, president, continues in that office, and also becomes chairman of the board, succeeding G. Harrison Smith, retired. Retirement of J. R. Clarke after 28 years as secretary was also announced. G. H. Mullinger was appointed secretary and assistant treasurer, and E. F. Howard comptroller, treasurer and assistant secretary.

F. B. Bimel was reelected vice president. Other directors are B. A. Myers, C. S. Wilcox, E. E. Soubry, L. F. McCollum, O. C. Wheeler, J. R. White and P. W. Lambright.

Sohio Moves Office

Sohio Petroleum Company has moved its Houston office from 2303 Esperson Building to 255 Mellie Esperson Building.



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Type "E" Tubing Catcher with Anchor

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Export Controls May Be Lifted Soon But Manufacturers Facing Handicaps

Controls on the exportation of many items, for which material supplies are indicated as improving in the near future, may soon be lifted by the Foreign Economic Administration, officials of which have been meeting with exporters to get their suggestions on reviving international trade.

Exporters are being deluged with inquiries for goods from all over the world, for many products the United States being the major, and sometimes only, available source of supply.

A number of major problems, however, will face American manufacturers when they reenter the export field, it is emphasized by officials in Washington. Although wartime controls are easing somewhat, exporters still are confronted with a variety of handicaps, including shortage of cargo space and uncertainty of ocean shipping; requirements of export licenses here and import licenses abroad, the "black list" and Trading-With-the-Enemy Act restrictions upon commerce with certain foreigners; financial and credit risks, including the blocking of funds and the "sterling area"; domestic price controls applying to foreign shipments; difficulties of obtaining supplies; disposal of surplus property abroad, and diversion of business through lend-lease and government trading.

FEA officials, anxious to lift controls as quickly as possible, feel they should do so only if their action does not place American businessmen at an even greater disadvantage than they are now under. The State Department is working on these and related problems in an effort to pave the way for normal business, and in the case of one or two individual commodities in specific markets already has made considerable headway.

Meanwhile, exporters have told FEA officials they are prepared to face the various hazards of foreign trade. They urged that the controls be lifted promptly, believing that they are in the best position to allocate distribution of their products abroad on an equitable basis when the supply situation improves.

South American Petroleum Congress Slated in 1947

At the third meeting of the International Permanent Council of the South American Petroleum Institute which has been concluded in Buenos Aires, it was decided to hold the first South American Petroleum Congress in January, 1947, in Lima.

Invited to participate will be public and private interests concerned with the production, manufacture and distribution of petroleum and its derivatives in the South American countries and the United States, as well as institutions of learning and the active members of the ISAP.

The executive committee of ISAP, with headquarters in Montevideo, as well as the Peruvian section, with headquarters in Lima, will have charge of the organization of the congress, and final details will be completed at a meeting of the International Permanent Council of South American Petroleum in March, 1946, at Santiago, Chile, headquarters of the Chilean section of the institute.

Industrial Plants, Sites Put on RFC Surplus List

The Reconstruction Finance Corporation last week listed 48 industrial plants and sites that have been declared surplus and available for sale or lease.

Values of the individual properties were not given, but the group as a whole represent a total disbursement by the RFC for land, buildings, machinery and equipment of $101,333,400.

Included in the list are a complete petroleum terminal of approximately 196 acres formerly operated by the General American Transportation Corporation at Jacksonville, Florida, and a completed calcined petroleum coke plant of 2650 square feet operated by the Great Lakes Carbon Company at Chicago. Also available are 846 acres of land and uncompleted construction, but no buildings, of a rubber project which was to have been operated by Rubber Synthetics, Inc., at Gary, Indiana.

Rehabilitation in Burma Fields to Be Slow Process

Rehabilitation of the Burma oil fields will be a long and costly process because of the thoroughness of British agents in damaging facilities at the time of the Japanese invasion.

This was the report given shareholders of Burma Oil Company, Ltd., by Chairman Robert I. Watson of Glasgow.

Explaining why a larger dividend was not passed, Watson declared that the company is faced by a difficult period of reorganization during which it will be dependent in great part on volume of purchased oils for which it can find a market; and on the margin between the cost and value of that oil to the company.

Watson said that when the Burma field was relinquished to the advancing Japs it was producing about a million tons of oil annually, which met Burmese requirements and supplied 50 percent of India's needs. But, acting on prearranged plan, British agents succeeded in damaging facilities so thoroughly that the Japs were denied all but a fraction of the output. These facilities must be restored as quickly as possible, Watson said, both because of the need for the oil and because of oil production's effect on rail, stores, road and engineering work.

A group of company officials will shortly inspect the fields and report what must be done.

The company report also revealed satisfaction with recent discoveries in the Punjab by Attock Oil Company Ltd., on ground continguous with Burma Oil's concession.

Department of Commerce Reorganization Studied

Reorganization of the Department of Commerce to prepare it for the increased responsibilities it will carry after the war is being studied by the immediate staff of Secretary Henry A. Wallace and is expected to be put into effect early this fall.

The activities of all department units, and particularly those of the commodity sections of the Bureau of Foreign and Domestic Commerce, are being examined with a view to determining where they will fit into the postwar program which Wallace is developing.

Department officials refuse to disclose what they may have in mind as the framework of a more aggressive organization, saying that so far nothing has been committed to paper. But they admit it is planned to bring the department much closer to the business and industrial interests it was created to serve.

Wallace would like to restore the department to the pinnacle of importance in American foreign trade which it reached under Herbert Hoover, and from which it was toppled by the New Deal.

High Octane Safety Fuel Called Boon to Aviation

A high octane safety fuel so resistant to accidental ignition that a lighted match can be dropped into it without causing a fire has been announced by technicians of Standard Oil Company (New Jersey) and Pan American World Airways. Hailed as what may be one of the most important technical advances in aviation, the safety fuel will increase utilization of commercial aircraft by making refueling in air practical for long range operation, it is said. Also its use will contribute importantly to various aspects of airline efficiency.

Research chemists have succeeded in harnessing hydrocarbons into fuel as safe as kerosine but with combustion power equal to the best fast-vaporizing gasolines, according to E. V. Murphree, vice president of the Central Technical Organization of Standard Oil Company (New Jersey). He pointed out that conventional motor and aviation gasolines ignite readily and burn rapidly when spilled because of the inflammable vapors formed. The new fuel must be heated to more than 100° F. to produce enough vapors to ignite, thus eliminating the dangers of flash fire from fast-vaporizing gasoline that might be set off by a spark.

☆ Oklahoma

Saturation in Lawson Test Is Unofficially Reported

Lawson wildcat continues drilling as oil men predict important field discovery; Gulf opens new area south of Garber pool; casing run to test Major County wildcat in Anadarko Basin area; Ohio extends Middle Rowe sand production in Cement pool.

McClain County: Oklahoma's most important wildcat test, Cities Service Oil Company's Lawson 1, C SW NW 22-5n-4w, was drilling below 10,956 feet and possibly heading for 12,000 feet as operator continued to withhold information as to tops and results of drill-stem tests. Unofficially, the well was reported to have cored heavy saturation from 10,788-908 feet with additional saturation exposed below that level. Several drill-stem tests are said to have recovered gas and oil. Play is heavy along a trend extending from the Apache field southeast through the new Marlow area and beyond Duncan. An operator recently paid $132,220 for a lease on 110 acres in the vicinity of the well.

Garfield County: Gulf Oil Corporation's Decker 1, SE SW NW 12-20n-4w, about 7 miles south of the Garber pool, which has been testing for several weeks, swabbed 122 barrels of oil, some gas and no water from Second Wilcox sand topped at 6078 feet. Total depth is 6119 feet. Unless the sand shows better the strike is likely to be unprofitable due to small production and depth. The area has attracted considerable attention since Cities Service opened the New Garber pool to the north. The discovery has proved restricted in area.

Caddo County: The Ohio Oil Company extended Middle Rowe sand production in the Cement pool ½ mile east at Wade 10, NW NE SW 2-5n-9w. Completed as a gas well at 6854 feet some years ago, it was plugged back and perforated at 4155-60 feet, testing 350 barrels of oil and about 400 barrels of water. Attempts are being made to shut off the water.

Major County: Superior Oil Company was preparing to set pipe at Manning 1, NE NE NW 27-22n-10w, near Ringwood in the Anadarko Basin area, to test the Cherokee sand section of the Pennsylvanian. The well was plugged back from total depth of 8239 feet and on drill-stem test at 6711-46 feet recovered about 650 feet of oil and 250 feet of oil-cut mud. H. L. Hunt's Clark 1, SE NE SW 32-22n-14w, northeast of Barney, was drilling below 8110 feet.

Osage County: Ashland Oil & Refining Company apparently has opened a new osage county pool about 1 mile southeast of the old Prue field. Osage 1, C NW SE 30-21n-11e, tapped the Hominy-Wilcox sand at 2446 feet and after drilling 2 feet and cleaning out, the well tested about 12 barrels of oil in the first hour on swab. Testing continues.

Pawnee County: Two miles north of the old Watchorn pool, Deep Rock Oil Corporation has established new Bartlesville sand production at Donohoe 1, NW NW NW 27-23n-3e, in a strike which may prove about 640 acres. Topping the sand at 3580 feet, the well was drilled to 3601 feet, total depth, and was completed as a 41-barrel daily pumper. Oil is 37 gravity and the well is producing about 50 barrels of water.

Cleveland County: On the west side of the West Moore pool, J. E. Crosbie, Inc.'s Stotts 1-A, NE NW SE 30-10n-3w, was drilling below 8370 feet and reportedly checking 40 feet higher than wells to the east. Unlike recent completions, the well tested gas only in the Bartlesville and is headed for the deep Wilcox zone. Mid-Continent Petroleum Corporation's Jury 2, NE NW SE 26-10n-3w, is another Bartlesville sand producer. Perforating opposite that zone at 7726-62 feet and 7796-7810 feet, total depth, the well flowed 50 barrels of oil an hour through 22/64-inch choke. Operator is running bottom hole choke.

Logan County: The Texas Company's Arundel 1, SE NE SW 2-15n-1w, near Evansville, tested some oil and water in the Bartlesville zone after drilling to dry Wilcox sand from 5805-5923 feet. Bartlesville was perforated at 5231-43 feet and after running bailer once it filled 3200 feet of oil in 180 minutes and then headed and flowed naturally at the rate of 5 barrels of oil an hour. Several hours later crews reported a water show which might be coming from a leaking casing joint.

Oklahoma County: Stanolind Oil & Gas Company was preparing to install pumping unit at Bednar 1, NW NW SW 23-13n-1e, new discovery near Luther and east of the Jones pool. The wildcat swabbed 40 barrels on a 10-hour test. Drilled to 5879 feet, all zones below the Cleveland were non-productive. The well was given agate shot treatment at 4630-45 feet and swabbed.

Oil Reservoirs Behavior Study Is Being Prepared

A program involving the study of behavior of oil reservoirs, which will include statistics on oil by-passing and future behavior of oil fields under known factors with recommendations for operational technique in primary and secondary-recovery practices is being prepared and will be presented to the American Petroleum Institute. The

Wells Completed in the United States in Week Ended July 21, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama									1	1	1	1	18	16
Arizona														5
Arkansas	6				6				1	1	7	4	102	125
California	42	1			43		1		6	7	50	51	1,202	1,115
Colorado	3				3						3		17	13
Florida													10	1
Georgia									1	1	1	1	6	2
Illinois	19		3	4	26		1		9	10	36	34	924	996
Indiana	5	1		2	8			1	5	6	14	11	171	159
Iowa													1	2
Kansas	23	8		6	37	1			4	4	42	42	901	989
Kentucky	7			5	12						12	14	239	398
Louisiana	9	1		2	12		2		4	6	18	22	553	411
North Louisiana	2	1		1	4				3	3	7	10	201	141
South Louisiana	7			1	8		2		1	3	11	12	352	270
Michigan												14	405	357
Mississippi	5			3	8						8	3	209	96
Missouri		1			1						1	1	18	17
Montana	12	1		1	14				2	2	16		117	175
Nebraska													3	7
New Mexico	5				5						5	3	235	229
New York	15		10		25						25	25	581	706
Ohio	10	1		2	13						13	12	402	477
Oklahoma	34		2	5	41	3	1		6	7	51	45	1,301	977
Pennsylvania	28	11	15	1	55	1					56	55	1,518	1,610
Tennessee													2	9
Texas	96	8		19	123	5	13	2	22	37	165	142	4,051	3,296
E.Tex.Bor. Co.'s		2			2						2	2	45	13
E. Texas Field														3
Rest of E. Texas	2	1			3		2		1	3	6	4	126	167
North Texas	25	2		9	36	2	4	1	6	11	49	38	947	768
W. Central Tex.	5				5	1	1		2	3	9	10	264	218
West Texas	28			2	30		3		3	6	36	23	1,026	869
Tex. Panhandle	6	2			8	1					9	16	325	136
G. Coast, Upper	4	1		2	7				3	3	10	15	391	305
G. Coast, Lower	17			2	19		3	1	1	5	24	26	585	516
Southwest Texas	9			4	13	1			3	3	17	6	287	246
S. Central Tex.									3	3	3	2	55	55
West Virginia	1	6		1	8						8	16	429	505
Wyoming	9			1	10				1	1	11		83	87
Total U. S.	329	39	30	52	450	10	18	3	62	83	543	496	13,498	12,780

* Includes distillate wells. † Includes salt water disposal wells.

work is being done by the production technology committee of the Mid-Continent section of API. This committee, with W. L. Horner, Barnsdall Oil Company, Tulsa, as chairman, outlined its plans in a recent Tulsa meeting. Committee members include J. J. Arps, British-American Oil Producing Company; A. W. Baucum, The Texas Company; P. T. Anstutz, Sohio Petroleum Company; W. A. Heath, Phillips Petroleum Company; W. B. Berwald, The Ohio Oil Company; W. A. Bruce, The Carter Oil Company; R. C. Earloucher, Geologic Standards Company; T. F. Laury, Ohio; Norman E. Maxwell, Cities Service Oil Company.

☆ Kansas

Discovery Southwest of Studley Pool Is Prospect

Sheridan County wildcat looms as new discovery southwest of Studley pool; Darby & Bothwell's strike north of Zurich draws high potential; Fincham wildcat in Pratt County to test Viola; Pawnee County wildcat gets good oil, gas shows on drill-stem test.

Sheridan County: Continental Oil Company's Hoxie State Bank 1, NE NE NE 32-8s-26w, along the northwest trend of the Kansas Uplift, looms as a new pool 2 miles southwest of the Studley field. Topping Lansing lime at 3627 feet with saturated section between 3758-73 feet, the well filled with 2100 feet of oil and about 60 barrels of water in 24 hours after being drilled in. Testing continues. Well was drilled to 4253 feet, total depth, dry in the Arbuckle and plugged back to the shallower zone.

Rooks County: Darby & Bothwell's Vohs 1, NES 14-10s-19w, pool opener 3 miles north of the Zurich pool, established a physical potential of 375 barrels of oil daily from Arbuckle lime at 3549-62 feet. Producing formation is running approximately 100 feet higher than the nearest dry holes.

Pratt County: Lion Oil Refining Company was running pipe at Finchman 1, wildcat in SW SW SE 29-28s-12w, about 2 miles southeast of the Chitwood pool, to test the Viola lime. Drill-stem tests at 4417-23 feet recovered 45 feet of oil-cut mud. A slight oil show was reported in the Simpson sand at 4530-38 feet. No shows were logged in Arbuckle lime topped at 4532 feet. Viola is reported running 37 feet lower than the same formation in the Chitwood pool.

Pawnee County: Stanolind Oil & Gas Company's Benson 1, NW NE NW 30-23s-15w, gauged heavy gas on drill-stem tests in the Lansing and Arbuckle zones. The wildcat also recovered 300 feet of oil as testing continued. A drill-stem test from 4077-93 feet in Arbuckle lime resulted in 5½ million cubic feet of gas and from 4093-4108 feet operator recovered 3½ million cubic feet of gas daily.

Barton County: Yellow Cab Company's Carroll 1, SW NE SE 21-17s-14w, discovery well for the new Carroll pool, has been completed with a pumping potential of 150 barrels of oil daily from 3356-70 feet, in Arbuckle lime. The well was deepened and acidized after initial tests showed 310 barrels of oil and 4 percent water.

☆ Michigan

Clare County Test Rated As Possible Pool Opener

The Pure Oil Company's Powell 1, N½ SW NW 7-18n-4w, Hatton Township, Clare County, showed 1500 feet of oil in 5-3/16-inch casing after standing 36 hours for a possible pool opener. Pay was logged in Dundee lime, topped at 4140 feet and bottomed for a test at 4223 feet. The wildcat is 8 miles east of the Freeman-Redding field and 4 miles north of the small Hatton oil-gas field.

Sanilac County: Shell Oil Company's Burch 1, NE NW SE 15-10n-15e, logged Trenton lime objective at 5490 feet and is drilling below 5660 feet after taking 2 drill-stem tests which showed negative pay results. Wildcat is removed 60 miles from any developed oil field.

Proration: The individual well allowable in the Deep River field, Arenac County, will be reduced from 150 to 100 barrels per day August 1 in an effort to obtain a better balance between withdrawals and reservoir pressures. Field has been on the 150 barrel allowable since January 16.

The State Oil Advisory Board recommended the lower proration following a close 3 months survey which revealed an average drop in bottom hole well pressures of 1 pound per day.

☆ New Mexico

Lea County Wildcat Enters Granite Above Ellenburger

Wildcat near Hobbs field enters granite above Ellenburger; Paddock field extended southwest with first producer from Yeso; Ellenburger discovery in Penrose field has 168 feet of broken pay.

Lea County: Stanolind Oil & Gas Company's Jones 1, 3¼ miles southeast of the Hobbs field, was plugging back from granite at 10,580 feet to retest a prospective oil and gas horizon in the 7100-foot Permian. This wildcat logged normal geological section below the Permian. The Texas Company's Eaves 1, 11 miles northeast of Hobbs field, was fishing for stem in lime at 9230 feet, while Geo. Livermore, Inc.'s Breckon-Texaco 1, between these wildcats, was drilling lime at 7410 feet.

Neville Penrose, Inc.'s Hinton 3, ¾ mile southwest of the Paddock 3-well area in the 5200-foot Glorietta (Holt) pool, was flowing 5 barrels of oil hourly after acidizing Yeso perforations at 6340-6420 feet. The semi-wildcat was plugged back from 7386 feet, having entered granite material at 7381 feet, being the highest in the county. The Yeso has not been tested in the Paddock pool proper.

Penrose et al's Federal-Penrose 1, previously indicated flowing producer from the Ellenburger and first deep test for the Penrose field, recovered 6 feet of oil-stained dolomite in core at 8098-8118 feet, or 168 feet in the Ellenburger broken pay zone. A drill-stem test was pending. This prospect is to be carried to water or granite before running oil string to obtain information on pay thickness in support of a drilling program to be undertaken by contributing companies.

Gulf Oil Corporation's Higgins 1, ½ mile north of its lower Clear Fork discovery in the southeast sector of the Drinkard field, flowed 417 barrels of 39-gravity oil, including 8 percent rotary fluid, on a 12-hour natural test through ¾-inch choke from open hole at 7912-8003 feet. This is the second well for the zone. The Texas Company's Blinebry 2, northwest offset to the discovery, was testing at 6881-7368 feet.

☆ West Texas

Reduction in Wildcatting Indicates Policy Change

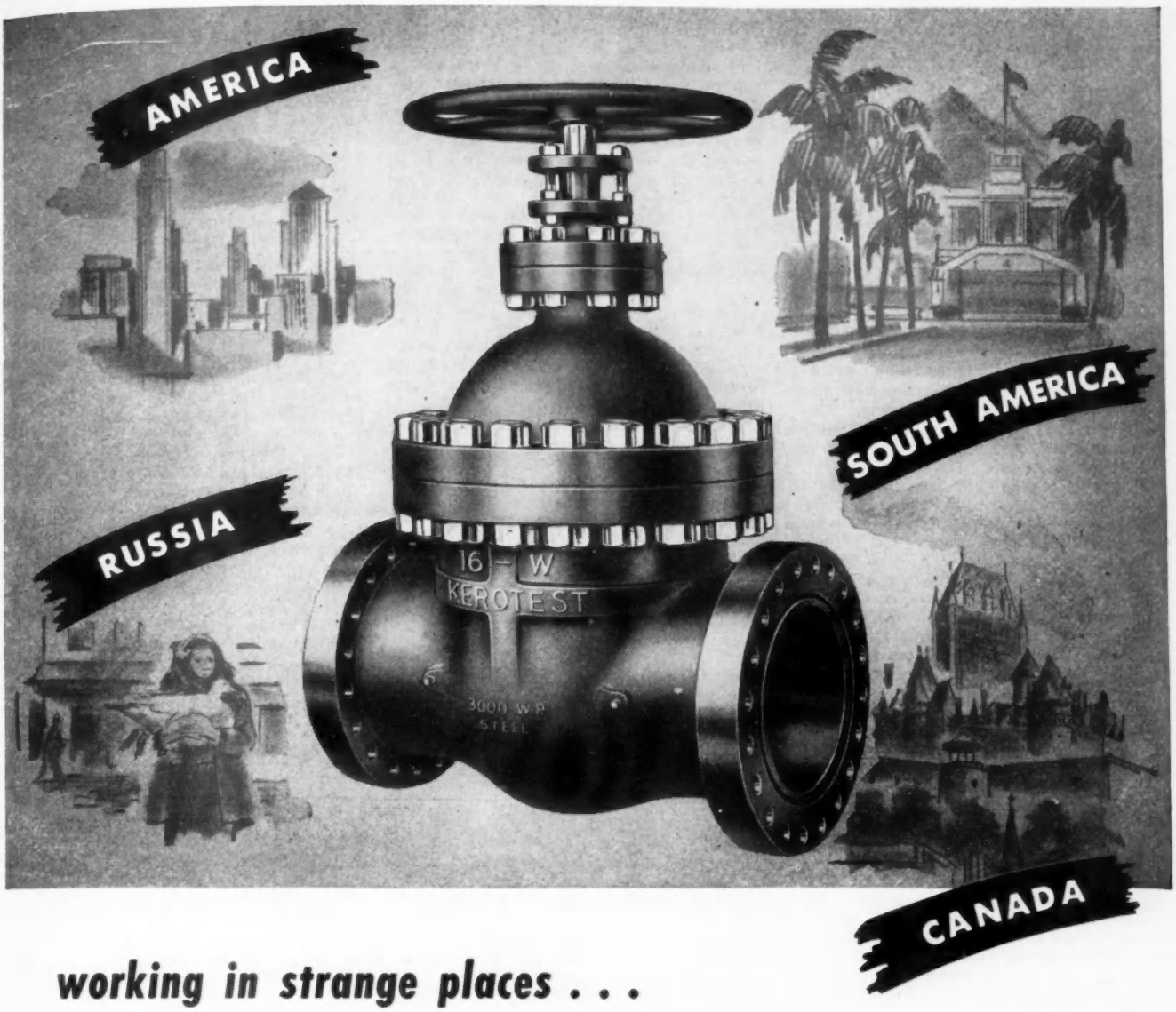
Six tests authorized near Crane County Ellenburger project that logged oil flow at intervals in 1005 feet of Devonian; district's ambitious wildcat program is subsiding, and development of sour crude areas probably has passed peak level for year; Andrews County multi-pay wildcat has 251 feet of broken pay in Ellenburger without water.

The reduction of wildcat starts to one each the past 2 weeks reflects a change in policy that may continue during the remainder of the year. The financing of exploratory tests through the sale of acreage and cash contributions from nearby lease owners has become increasingly difficult since V-E Day. Wildcat operations will not be discontinued as many blocks, supported by favorable geology and geophysics, will be drilled to forestall lease expirations, as frequently a test involves less expenditure than renewal bonus.

Drilling in sour crude areas is showing signs of abatement, although completions will continue at a high rate for some weeks due to extensive operations undertaken the first quarter. The sweet crude areas will come in for greater development due to the anticipated firm demand and high price during the post-war period.

The change in drilling trend is occurring in the face of a record demand for all types of crude available in the district, with some prospects of even greater daily yield, if rail shipments to the West Coast can be stepped up. Pipe line movement is near the saturation point. The discovery of deeper and more costly oil areas forecasts fewer wells on restricted budgets, while many of the leading operators have accumulated a comfortable backlog of proved and semi-proved acreage within the past 2 years. Those in the latter category are curtailing their wildcat program.

Crane County: The Atlantic Refining Company's University 1-A, 5⅔ miles west of the McElroy field and 2 miles southwest of a 10,659-foot Ellenburger failure, was drilling lime and chert at 9096 feet in Silurian, topped at 8895 feet, or 372 feet high. An incomplete drill-stem test at 9028-75 feet failed to show oil, gas or water. Flowing production developed at intervals from 1005 feet of Devonian, topped at 7890 feet, is a record pay section for this formation. The company has authorized immediate drilling of 6 additional Devonian tests on an



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equal number of 160-acre leases due to expire November 14, 1946, all situated within ¾ mile of the pending discovery. Phillips Petroleum Company holds a 160-acre lease within this cluster.

Humble Oil & Refining Company's Cowden 1, 10 miles south by east of the above Devonian area, was drilling lime and chert at 6425 feet without shows since testing oil, gas and water in Devonian, topped at 6079 feet. Gulf Oil Corporation's Scott 1-E, 1¼ miles northeast of the West Sand Hills shallow pool, was abandoned at 7758 feet in Ellenburger, topped at 7578 feet.

Andrews County: Shell Oil Company and The Texas Company's Ratliff-Bedford 1, wildcat with 4 oil zones, resumed coring at 11,269 feet, or 251 feet in Ellenburger broken pay, after recovering 500 feet of oil and 650 feet of heavily oil- and gas-cut mud on a 28-minute drill-stem test with packer at 11,226 feet.

Magnolia Petroleum Company-Humble's Cowden 1, ⅝ mile northeast of a 8012-foot wildcat failure in Southwestern Andrews County, resumed drilling after testing dry at 7779-7806 feet in Devonian, topped at 7778 feet with elevation of 3135 feet. Base of Permian was called at 7645 feet, or 246 feet high.

Glasscock County: Phillips Petroleum Company's McDowell-McDow 1, ¾ mile southwest of a 10,906-foot Ellenburger failure, entered the Ellenburger at 10,410 feet with elevation of 2533 feet, being 86 feet high. A drill-stem test at 10,460 feet proved dry, and the prospect was drilling at 10,490 feet. The nearby deep failure drilled 313 feet of Ellenburger before reaching a prolific flow of hot sulphur water.

Irion County: Shell Oil Company's Tankersley 2, Basal Pennsylvanian discovery, flowed 96 barrels of 45.4-gravity oil and 6 barrels of bottom sediment and water on potential test through ⅛-inch choke after acidizing perforations at 7195-7200 feet. This strike was plugged back from Cambrian at 8408 feet, and is on a 12,989-acre lease. The production will be trucked 32 miles to Shell Pipe Line Corporation's El Dorado station on its McCamey-Houston line. Skelly Oil Company's Sugg 1 was drilling shale at 7625 feet, and John I. Moore et al's Murphey 1 had landed surface pipe. Both are slated to drill to the Ellenburger.

Ector County: Sinclair Prairie Oil Company's Williamson 1, 2⅜ miles north by west of the TXL field's Ellenburger discovery, was drilling limey-shale at 8888 feet in Silurian, topped at 8680 feet, or 180 feet low. A drill-stem test at 8679-8720 feet returned 990 feet of gas-cut mud and 3510 feet of oil-cut mud and salty-sulphur water, indicating close proximity to production.

Development of the TXL field is being enlarged each week with new locations exceeding the completions. The area has 41 operations, including 24 drilling, 3 testing, 2 rigs, 4 derricks and 8 locations. Current interest is centered upon outposts to the southeast that will reach a decisive stage in the Devonian this week.

Ellenburger wildcat projects in Ector County increased to 5 with the announcement that Humble's Cummins 1, 1¼ miles southeast of the North Goldsmith field, will be drilled to the 10,000-foot level.

Winkler County: Stanolind-Shell's Waddell Bros. 1, ¾ mile northwest of the Wheeler field, appeared doubtful of making a producer in the Ellenburger as it was drilling dry Simpson at 10,595 feet. This correlates 29 feet below the top of the Ellenburger in nearest producer.

Production in the Keystone-Ellenburger area will register a sharp rise within the next 2 weeks due to a large volume of wells nearing the completion stage. The Ellenburger zone has 41 active tests, one rigging up and 4 locations. Richardson & Bass, Inc.'s Kansas City 1, 2¼ miles southeast of nearest Ellenburger production, failed to make a producer in this zone and the Simpson in plugging back by stages from 10,673 feet, and will perforate higher. The firm's Sanford 1, ½-mile south, was abandoned at 9772 feet, having entered the Simpson at 9680 feet, revealing a sharp dip in structure.

Midland County: Humble's Buchanan 1, wildcat that passed up gas-distillate production in Lower Permian at 11,300-foot level, failed to show oil or gas on 3 incomplete drill-stem tests made since entering barren Ellenburger at 12,170 feet.

☆ Central West Texas

Concho County Test Has Good Ellenburger Show

Concho County semi-wildcat has promising show in Ellenburger; water level reached by Parker County Ordovician prospect; Jones County discovery makes prolific flow from the Swastika lime..

Concho County: Northern Ordnance, Inc.'s Drinkard 1, SE NW Sect. 81, J. V. Massey survey and ¾ mile northeast of Marble Falls gas production in the Edna field, cemented pipe on top of Ellenburger at 3423 feet after recovering oil and gas shows in testing at intervals to 3560 feet.

Parker County: Continental Oil Company's Dobbs 1, Hugh Brown survey and 5 miles southeast of Poolville, tested salt water at 6336-6413 feet in Ellenburger, topped at 6090 feet. This wildcat has been plugged back to 6226 for further testing, and an oil show passed up at 6230-50 feet is the main objective.

Jones County: C. B. Roberts et al's Cooper 1, SE SE SW T&P Ry. 29, Block 15, an offset to a 4935-foot Bend lime failure that indicated saturation in the Swastika, flowed a potential of 451 barrels of 40-gravity oil through 1-inch choke after using 1500 gallons of acid at 2312-32 feet. The Swastika zone has an excellent crude recovery average in this area.

Harold Neely and Humble Oil & Refining Company have authorized the drilling of an Ellenburger test on their Spencer lease, embracing the NE ¼ Sect. 195, Avoca field.

Producing Leases Sold

Grafe-Callahan Construction Company has purchased a half interest in Jennie Rubin and associates' 4348 acres of gas producing leases, with 4 wells, for $165,000 cash. The wells produce sweet gas, and have a combined rated potential of 83,750,000 feet daily. Three additional wells are to be drilled by the partnership.

☆ North Texas

Sivells Bend Extension Is Best of Four Completions

Sivells Bend field extension is largest of 4 completions; Viola Lime area in Montague County expanded northeast; Jack County deep prospect reaches water in Ellenburger.

Cooke County: Sun Oil Company's Field 1, 1¼ miles south by west of the Sivells Bend field, flowed 244 barrels of 41-gravity oil natural on official test through ⅜-inch choke from Beasley (Strawn) sand perforations at 6690-6704 feet. Sinclair Prairie's Thomson 2, east offset to the Beasley sand discovery, was making production test of perforations at 6843-54 and 6822-32 feet. Magnolia's Dillard 1, northwest offset to the Rasure sand discovery, was drilling shale at 5840 feet.

Montague County: Continental Oil Company's Landrum 1, ½ mile northeast of the McNutt pool, only Viola lime area on production in the state, flowed 570 barrels on 19-hour test through 1-inch choke, then flowed 114 barrels, with gas-oil ratio of 1637/1, on 6-hour official test through 14/64-inch. Production is from open hole at 6700-32 feet in Viola, topped at 6694 feet, or 9 feet high. The zone was treated with 2000 gallons of acid. Company is starting its third test.

Nu-Enamel Oil Operating Company's Agee 1, NWc Block 21, Kaufman County School Lands and 5 miles northeast of Nocona, entered granite at 5370-71 feet, and will plug back to test oil saturation passed up in the Strawn series.

Development of the prolific Bend lime and conglomerate area opened northeast of the Stoneburg pool and possibly a northwest extension to the Hildreth field by Continental and W. B. Omohundro is to be followed by immediate development. Continental is starting Corpening 1 to the northwest. Louis Sikes et al acquired lease on the southeast 1000 acres of the R. M. Davis Survey A-181 from W. B. Omohundro and associates for $35 per acre cash and $75 per acre, payable from production. Location has been made for Fowler 1, ¾ mile northwest of the big well.

Jack County: Continental Oil Company's Borden 1, 4¼ miles southeast of Newport, filled 200 feet from surface with water from open hole at 6882-6927 feet in Ellenburger, topped at 6870 feet, or 67 feet high to failure 1½ miles southeast.

Texas Well Permits

Permits to drill 139 new wells in Texas were approved last week by the Railroad Commission. This included 52 in North Texas, 31 in Southwest Texas and 19 in West Texas. There were 14 new locations from the Gulf Coast, 11 from West Central Texas, 6 from East Central and 6 from the Panhandle.

Lebanese Agreement

The Lebanese government has signed an agreement with Socony Vacuum Oil Company and Standard Oil Company (New Jersey) permitting them to build two refineries at Tripoli, 40 miles from Beyrouth.

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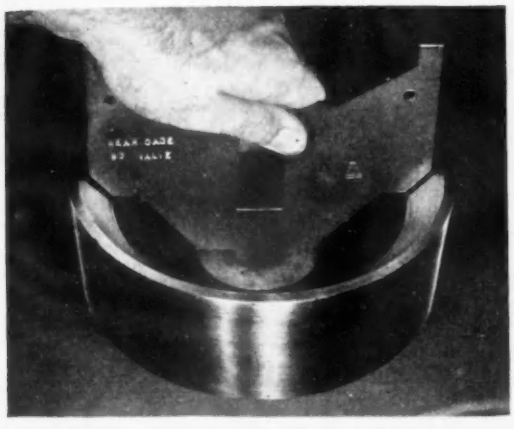
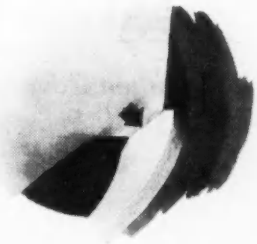
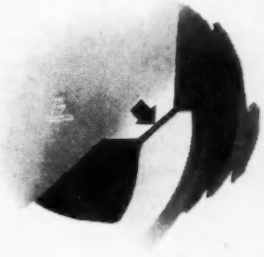
CHECKING THE VALVE SEAT FOR BUSHING WEAR . . .





TIME TO CHANGE BUSHING

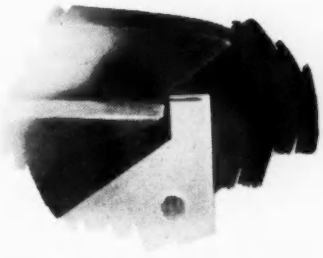
When the wear gage touches the sealing surface of the valve seat, as shown here, the bushing is worn and should be changed.



NEW BUSHING INSTALLED

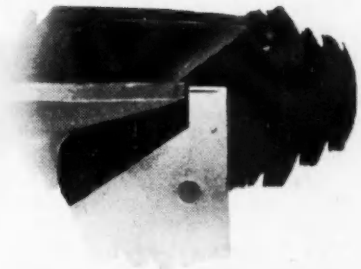
Notice how the wear gage stands away from the sealing surface of the valve seat when the bushing is in good condition. This means long, trouble-free service ahead.

CHECKING THE VALVE BODY FOR WEAR . . .



GAGING A WORN BODY

When the line on the wear gage is above the surface of the valve body as shown here, the body is worn and should be changed.



HOW GAGE APPEARS ON A NEW BODY

Notice how the line is now well below the surface of the body. Prompt changing of worn valve bodies results in long insert life and greatest freedom from valve troubles.

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☆ East Texas

Outpost in Merigale Field, Wood County, Flowing Wild

Merigale field outpost flowing wild; Cherokee County deep test will plug back and set pipe to test show in Rodessa; third producing area in view for Harrison County.

Wood County: Bobby Manziel et al's S. Shamburger 1-A, J. M. Rodgers survey and a southwest offset to single flowing well in the Merigale field, blew out while running tubing with the hole bottomed at 4900 feet and was flowing out of control. No estimate was made of the flow, which reached 30 to 40 feet above the surface. This outpost cemented pipe on top of the regular sub-Clarksville sand pay at 4760 feet, and is credited with having logged 60 feet of oil-saturated sand, with the possibility of production coming from sub-Clarksville and also the upper Woodbine. The well is northeast of Allied Oil Company's Chrietzberg 1, Paluxy failure at 7286 feet.

Cherokee County: Humble Oil & Refining Company's Maness 1, J. M. Musquez survey, was scheduled to set pipe near the 9250-foot level after drilling into Travis Peak to 9289 feet. Possible gas production was passed up in the 7800-foot Rodessa.

T. G. Shaw, Trustee's Bolton-Pure 1, Chas. L. Widgeon survey and 3½ miles southwest of Summerfield, has been delayed in setting pipe by flood waters.

Wildcats: Placid Oil Company et al's Ramsey 1, 2 miles southeast of Mount Pleasant, Franklin County, entered the massive anhydrate at 6545 feet, and was drilling Rodessa shale at 6715 feet. In Hopkins County, Magnolia's Beville 1, Hayden Arnold survey, cemented 9-inch casing at 5401 feet in Georgetown, topped at 5275 feet with elevation of 457 feet. The Bowie County Smackover project of Northern Ordnance, Inc., on the Lumpkin 160-acre tract, Dalby Springs area, was drilling at 4915 feet in dry Paluxy, topped at 4830 feet. L. L. Collins et al's Greenlee 1, Navarro County Travis Peak project, was drilling at 5310 feet in Georgetown, topped at 4040 feet.

Henderson County: Lone Star Producing Company's Murchaison-Wofford 1, northwest offset to its LaRue pool

Harrison County: A third producing area is in view for the county with the report that Rogers Lacy's J. R. Tuttle et al 1, J. M. Clifton survey, 3 miles north of Marshall, recorded a small flow of oil. The well is reported testing from the Basal Trinity series, but exact perrorations were not revealed. All geological information on the well is being withheld, only total depth of 7027 feet being reported. The well has also had gas shows in the Travis Peak and Pettit.

Lacy's Mrs. E. L. Poteet, Betty Humphries survey, is drilling below 5516 feet; and his B. C. Quinn 1, Vashti Gibbs survey, is drilling below 3375 feet.

D. E. and R. J. Whelan's Peal 1, Betty Humphries survey, which tested as a gas-distillate producer, has not yet taken official gauge. On latest 4-hour drill-stem test of perforations from 6776-94 feet, the well made 59 barrels of distillate and 10 million cubic feet of gas per day on open flow. Total depth is 7862 feet.

Shelby County: Humble Oil & Refining Company is drilling below 9470 feet in sand and shale toward the Smackover in Pickering Lumber Company 1, St. Francois survey, wildcat 9½ miles south of Shelbyville.

M. E. Davis' Pickering Lumber Company 1, W. J. Brittian survey, 6 miles southeast of Patroon, is drilling below 6250 feet in the Hill zone, after logging slight show of oil and gas around 6110 feet.

San Augustine County: M. E. Davis' Thomas 1, W. B. Horn survey, has cleaned up fishing job and is drilling below 8240 feet. No shows of commercial production have been found.

Marion County: Jefferson Oil & Gasoline Company's DeWare, Jr., et al 1, upper Ruben Bennington survey, is drilling below 6345 feet in lime. Cores from the Pettit showed slight stain of oil.

Nacogdoches County: Magnolia Petroleum Company's W. L. Harrell 1, W. Wray survey 1, is drilling below 4165 feet.

☆ Southwest Texas

McMullen County Wildcat Has Small Show of Gas

Small gas show reported in McMullen County wildcat; several wildcat failures recorded in Duval County; Sejita field well is completed.

McMullen County: Santa Clara Oil Company's Volney M. Brown 1-A, wildcat 12 miles west of Whitsett, is reported drilling below 4085 feet in sandy shale. A drill-stem test at 3572-76 feet recovered mud, gas-cut mud, and sulphur water.

Duval County: Republic Natural Gas Company's C. K. Gravis 1, wildcat 8 miles southwest of San Diego, has been abandoned at 5417 feet.

Glenn H. McCarthy's Clara Driscoll 1, 14 miles northwest of San Diego, also is a failure at 4035 feet.

In the rapidly developing Gormac field, Humble Oil & Refining Company's Duval County Ranch Company 3-J is being completed through perforations at 2466-76 feet.

Trinity Gas Corporation's Garcia 2, in the Sejita field, has been completed for 135 barrels of 43.6-gravity oil daily through a ⅛-inch choke from a series of perforations at 5796-98 feet, 5804-09 feet, and 5818-31 feet.

Starr County: Continental Oil Company has staked M. M. Garcia 1-N, Boyle field. Contract depth is 4200 feet.

Jim Hogg County: Dulup Oil Company's San Juan Ramirez et al 2, wildcat test 10 miles south of Petroleum, is abandoned at 2526 feet after logging water in top of the Yegua sand at 2513 feet.

GE Building Planned

General Electric Company will build a new research building near Schenectady, New York, as soon as WPB approval can be obtained. The building will cost approximately $8,000,000, and will provide 50 percent more space than present facilities afford.

☆ South Central Texas

Gas Field Being Opened Near Carrizo Springs

Gas field being opened near Carrizo Springs; deep tests active in Kerr County; Continental to drill deep Bastrop County wildcat; Bexar County well has slight show.

Dimmit County: A new gas field apparently is being opened 4½ miles southwest of Carrizo Springs at Calatexia Oil Company's S. E. McKnight 1, Sect. 35, Block 18. The test was drilled to 2995 feet and a drill-stem test at 2642-51 feet recovered 150 feet of mud with 200 pounds dry gas pressure. Operator has set casing at 2764 feet for completion.

Kerr County: Two deep tests are active in this area. Phillips Petroleum Company's Whitworth et al 1, southwest of Kerrville, is drilling below 6175 feet in sandy shale. Sand was logged at 5631-6118 feet with a slight gas show reported in the sand around 6050 feet.

The Ohio Oil Company's Charles J. Robinson 1, Ordovician test, is drilling at 5900 feet in shale.

Bastrop County: Continental Oil Company has staked a 9000-foot wildcat test 4½ miles north of Cistern. It is the Willie Malina 1, in the Andrew Graham survey.

Bexar County: Pegg Brothers and Associates' V. Peterson 1, wildcat 5 miles southwest of McDonna, set casing at 1238 feet and to be abandoned after swabbing some oil around 900 feet.

☆ Lower Texas Coast

Live Oak County Is Due For New Yegua Sand Pool

New Yegua sand pool seen in Live Oak County; final gauge reported on Albert West discovery; new gas sand opened in Gaffney field; outpost completed in Jackson County pool; Willacy County wildcat still testing.

Live Oak County: A new Yegua sand pool is being opened 9 miles southeast of George West at Wright Drilling Company's Mrs. M. A. Hinant 1, Ed Quinn survey. Drilled to 6518 feet, operator set 5½-inch casing at 5761 feet and 5-inch liner to total depth. After making a squeeze job, pipe was reperforated at 5772-83 feet with 66 shots and the well is cleaning into pits without gauge, making 28-gravity oil. Casing pressure is 2000 pounds and tubing pressure 1300 pounds. A potential now is being run.

On a final potential gauge, Continental Oil Company's Albert West 2-A, discovery well for the Albert West field, flowed 103 barrels of oil daily through a 9/64-inch choke from 6715-18 feet. Casing pressure was 2200 pounds and tubing pressure 1700 pounds. The flow was 4 percent salt water.

Victoria County: Arkansas Fuel Oil Company has completed its Etta Terrell 2-A in a new gas sand in the Gaffney field. Perforated at 5312-23 feet, the well

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gauged 11 million cubic feet of gas daily, open flow. The new sand is in the top of the Vicksburg.

Jackson County: Humble Oil & Refining Company's O. S. York et al 1, outpost in the Sterling field, has been completed as a dry gas well through perforations at 4784-4802 feet. The flow was 2,644,000 cubic feet daily through a ¼-inch choke. Tubing pressure was 1870 pounds and casing pressure 1910 pounds.

Goliad County: Magnolia Petroleum Company is preparing to deepen R. F. Irby 1, Callahan survey, wildcat test 12 miles southwest of Goliad, to 12,000 feet after running an electrical log at 9900 feet. Original projected depth was 10,000 feet.

Bee County: Bridwell Oil Company has made location for a 4500-foot wildcat test 2 miles east of Beeville. It is the George A. Ray 4 in the Anna Burk survey.

Brooks County: Sun Oil Company is preparing to drill a wildcat test 6 miles southeast of Falfurrias and 2760 feet southwest of a recent dry hole. The new test is the Mary M. Lasater 2-B. Projected depth is 7500 feet.

DeWitt County: Shell Oil Company's J. F. Garrett 1, John R. Foster survey, wildcat test 2½ miles south of Terryville, has been abandoned at 8850 feet.

Willacy County: J. S. Abercrombie Company and Magnolia Petroleum Company's H. H. Dohe 1, prospective wildcat discovery well near Raymondville, is continuing a series of tests. The last at 7835-45 feet recovered gas and distillate. The flow was estimated at 50 barrels of 59-gravity distillate daily with a gas-distillate ratio of 40,000/1. Operators now are testing just above 10,000 feet.

☆ Upper Texas Coast

Altair Wildcat Completed; New Ulm Test Holds Interest

Superior completes wildcat in Altair area; New Ulm test holds interest; San Jacinto County deep test is failure; Sun testing Jefferson County wildcat; Blue Lake pool extension completed.

Colorado County: The Superior Oil Company of California has made final completion on its Mrs. Matildo Tait 2-A, wildcat discovery well in the Altair area. On a 24-hour gauge the well flowed 432 barrels of 57.1-gravity condensate through a 16/64-inch choke. Tubing pressure was 1900 pounds with gas-condensate ratio 3060/1. Production is from the Wilcox sand through perforations at 8256-68 feet.

Austin County: Another Wilcox sand wildcat test being watched closely is Sinclair Prairie Oil Company's W. A. Schweke 1-A, 2 miles southeast of New Ulm, James Tylee survey. Information on this well is being withheld but at last report the test was drilling near 9400 feet. A 15-minute drill-stem test at 9155-68 feet recovered 500 feet of 36-gravity oil through ¼-inch chokes.

San Jacinto County: Brewster & Bartle's Olive J. Park 1, Wilcox sand wildcat test 6 miles north of Cleveland, has been abandoned at total depth of 9017 feet. This well had a slight show of oil in top of the Cockfield around 5290 feet but no tests were made.

Jefferson County: Sun Oil Company's American National Bank 1, wildcat in the Taylors Bayou area, is preparing for initial test after running tubing to 8333 feet.

Liberty County: Shell Oil Company has staked a 6000-foot wildcat test 3 miles south of Cleveland. It is the J. H. Weaver 1 in the Thomas Devers survey.

Harris County: A. T. McDannald and Jack Frazier have made location for an 8000-foot wildcat test west of Almeda. It is the B. F. Louis 1 in the N. B. Waters survey.

Brazoria County: Glenn H. McCarthy has completed W. W. Smith 2 in the Blue Lake field, 1140 feet west of the W. W. Smith 1 oiler. The producer flowed 767 barrels of 34.6-gravity oil daily through a ¼-inch choke from sand topped at 8665 feet.

About 4 miles northeast of the Velasco townsite, McCarthy has spudded S. W. Hudgins 1, 10,000-foot wildcat test in the B. T. Archer survey.

Matagorda County: Stanolind Oil & Gas Company's Barth 1, northeast outpost in the East Bay City field, is reperforating casing at 10,436-450 feet for another test.

Swope Foundation Set Up By General Electric Firm

A fund of $400,000 has been set aside by the directors of General Electric Company to be known as the Gerard Swope Foundation. Swope served as president of General Electric for more than 19 years, from May, 1922, until the close of 1939, and for an additional two years in 1942-44 he returned to head the company when C. E. Wilson, now president, was acting as executive vice chairman of the War Production Board.

When he resigned at the close of 1944, Swope had also served as a director of the company for more than 22 years.

Magnolia Quotes Prices

Price schedule for Abell and Apco-Warner (Ordovician) fields in Pecos County, Texas, has been announced by Magnolia Petroleum Company as follows: Below 25-gravity, 93 cents, with 2-cent differential per degree of gravity beginning at 95 cents for 25 to 25.9 up to a top of $1.25 for crude of 40-gravity and above based upon use of 100 percent tank tables.

☆ South Louisiana

New Field Is Opened South of St. Gabriel

New field opened south of St. Gabriel; Ohio testing wildcat north of Abbeville field; deep sand opened at Lake Barre; final gauge made on Rapides Parish Wilcox sand discovery well; South Edgerly gets new test.

Iberville Parish: Noble & Baker's W. E. Caldwell 1, 52-9s-2e, wildcat discovery well in the South St. Gabriel area, is cleaning through ⅛-inch choke, making 37.9-gravity oil. No gauge has been announced. This wildcat was drilled to 9305 feet with 7-inch casing on bottom. Sands were reported logged at 8798-8810 and 9181-9222 feet. For the initial test, operators perforated at 9190-9211 feet

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with 114 shots. As the well started to clean the tubing pressure was 2150 pounds and casing pressure 2300 pounds. The new oiler is more than a mile south of the regular St. Gabriel producers and is said to be across a fault from that pool. Storage is being erected.

Vermilion Parish: The Ohio Oil Company's Elie LaLande, 8-11s-3e, wildcat test 8 miles north of the Abbeville field, is preparing to test deep sands. The well was drilled to 11,968 feet and 5½-inch casing set at 11,957 feet. Operator perforated casing at 11,852-888 feet and squeezed before making completion attempt.

North of the West White Lake field, Union Oil Company of California's State 2-A is drilling below 11,265 feet in sandy shale.

Terrebonne Parish: The Texas Company has opened a new deep sand in the Lake Barre field. The company's State-Lake Barre 44, in 19-21s-20e, drilled to 13,259 feet and set 7-inch casing at 11,250 feet and 5-inch at 11,794 feet. Pipe was perforated at 11,772-788 feet and the well flowed 41 barrels of 54-gravity condensate daily through a ⅛-inch choke. Tubing pressure was 4050 pounds with the gas-oil ratio 46,000/1. Lake Barre was discovered in 1929 with the previous deep production being at 10,457 feet.

Rapides Parish: After being shut down for several weeks, final completion has been made on Louisiana Land & Exploration Company's J. A. Bentley, Jr., 2-A, Tract 2, Flatwoods area. Drilled to 7288 feet, 5½-inch casing was set at 6600 feet and perforations made at 6488-94 feet. The well is credited with pumping 48 barrels of 48-gravity oil daily. Production is from the Lower Wilcox.

Jeff Davis Parish: Gulf Refining Company's Lacassine Company, Inc., 1-A, 19-11s-5w, wildcat in the Hayes area, is drilling below 10,785 feet in shale and shells. The test is projected to 13,000 feet with a string of 7-inch casing set at 10,725 feet.

Calcasieu Parish: Gulf has staked location for a new test on the south side of Edgerly dome where the company's Louisiana Sulphur Mining Company 1-A opened production at 9325-50 feet. The new test is the Louisiana Sulphur Mining Company 2-A, west offset to the discovery well.

Union Sulphur Company is preparing to drill a Hackberry sand test on the northwest flank of the Lockport field dome, 4 miles east of Lake Charles. It is the Bordages 1 in 5-10s-9w.

Beauregard Parish: Magnolia Petroleum Company's Lutcher 1-D, 34-5s-12w, wildcat test, is waiting on orders after running electrical log to 10,000 feet.

St. Mary Parish: The Atlantic Refining Company has spotted location for a deep test in the North Jeanerette area. The test is the Teche Sugar Company, Inc., 2 in 19-13s-9e. Projected depth is 12,300 feet.

Louisiana Field Named

The Louisiana Department of Conservation has designated North Shongaloo field as the official name for the new producing area opened by Hunt Oil Company's Mrs. O. G. Roberts 1, 11-23n-10w, 5 miles east of Springhill in Webster Parish, North Louisiana. The well was officially completed June 18, flowing 90.88 barrels of 38.7-gravity oil through 3/16-inch choke on tubing from Pettit lime perforations at 5734-44 feet.

☆ North Louisiana

Richland Parish Field May Be Comparable to Delhi

Wildcat activity not abated by 3 failures; new Richland Parish field may be comparable to Delhi; Tremont area may have second gas-distillate producer.

Richland Parish: Official test has not been taken at Southport Petroleum Company's Lola S. Howard 1, C NW NW NW 4-16n-8e, 6 miles southwest of the Delhi field. Crews are still erecting tanks. The Tuscaloosa sand discovery flowed 7 barrels of 40-gravity oil per hour into pits after perforations were made opposite 2965-80 feet. Location is on the east flank of the Richland structure, producing from a pinch-out sand. The reservoir is believed entirely separated from the Delhi field.

American Liberty Oil Company's J. B. Kny 1, NW NW 12-16n-8e, was completed last March for 2,100,000 cubic feet of dry gas through ¼-inch choke from 3557-62 feet, but was considered a noncommercial well. Leases in the area are very closely held with active royalty trading in progress.

H. W. Todd et al's Greer Estate 1, NE SW 13-16n-7e, another Richland wildcat preparing to spud, will be watched with interest.

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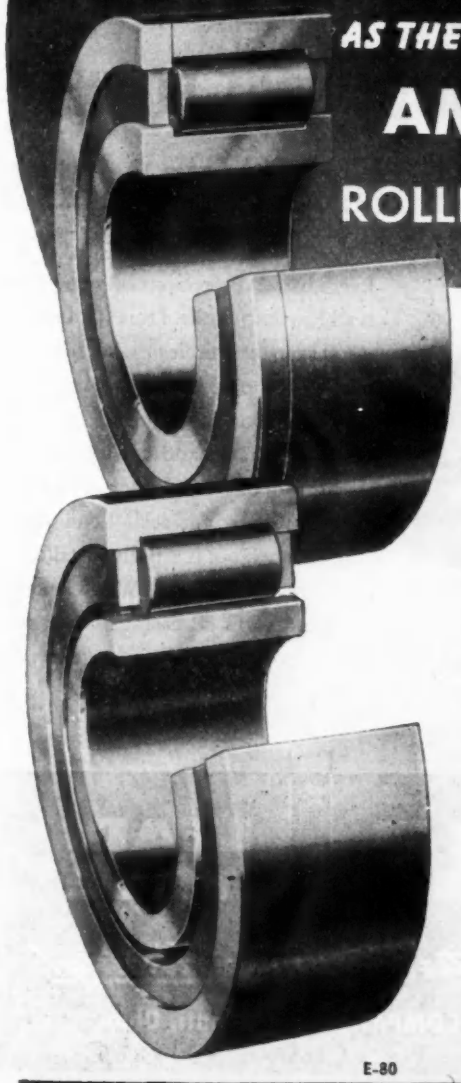

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low 4645 feet in Valentine 1, C S½ SW NE 12-15n-6e, without showings.

Madison Parish: Charles Murphy and Sun Oil Company have obtained permit for a wildcat 3 miles north and 12 miles east of Delhi production. It is Joe Mahoney 1, 10-17n-11e.

V. S. Parham abandoned Kathan and Johnson 1, 35-18n-10e, at 4560 feet, no shows.

DeSoto Parish: Tom Palmer is drilling below 6085 feet in Pettit, topped at 6040 feet, in Walter Hill 1, C NW SE 3-10n-13w, deep test in the shallow Benson field. No shows have been reported in this zone. Sidewall cores in the Hill zone of the Rodessa section carried a stain and odor of oil, though commercial possibility in this horizon is dubious.

Grady H. Vaughn's McGrew 1, C SW SW 34-16n-14w, wildcat in the Keithville area, is drilling below 8320 feet in the Travis Peak horizon without shows.

Charles Lowery's Tanner 1, 13-10n-11w, west of Ajax production, will seek shallow production to 3300 feet.

Lincoln Parish: The California Company has reported logging sand indicating gas-distillate production in W. W. Norris 1, 13-18n-1w, 1½ miles east and ¼ mile south of the Tremont field discovery well. This test is slightly lower on structure than the discovery, which was completed from 9060-80 feet. Coring continues below 9086 feet.

The company is drilling below 7785 feet in M. H. Nobles 1, 12-19n-4w, 10,500-foot wildcat in the Hico area, which has failed to log indications of commercial production.

Concordia Parish: The Carter Oil Company has been unable to kill gas flow of 5-6 million cubic feet a day at George Murray 2, 32-9n-10e, Lake St. John field. The well has formed a crater and crews are preparing to cut off casing before trying to kill the gas, which is believed flowing from the Wilcox horizon. Total depth of the well was 7350 feet at the time of its blowout. Fire was extinguished by 30 quarts of nitroglycerin.

LaSalle Parish: Arkansas Fuel Oil Company abandoned Tremont Lumber Company A-7, 4-9n-2e, shallow test in the Olla field, at 2807-26 feet.

West Carroll Parish: California abandoned its wildcat, Hodge-Hunt Lumber Company 1, C SW NW 6-19n-9e, at 7039 feet, after a drill-stem test of Smackover tested salt water. The well was plugged back to 6711 feet, but failed to stop water encroachment.

F. Kirk Johnson is drilling below 2825 feet in J. B. McIntosh 1, SE NE 4-22n-10e, scheduled 5200-foot wildcat test which spudded 2 weeks ago.

Webster Parish: Hope Producing Company has applied for permit to drill Nora Davis 1, C NE NE 34-18n-8w, second test for the Ada gas field, opened by Carter's N. P. Davis 1, C NE NE 33-18n-8w, from the Travis Peak last October. The new test is east of the discovery.

Red River Parish: George D. Stevens' L. P. Stephens 1, 27-12n-9w, has been staked as a 2000-foot or Blossom sand test.

Bossier Parish: Barnsdall Oil Company-Sohio Petroleum Company were changing bits at Padgett-Bundy 1, C NW SE 17-20n-12w, in the Benton field, at total depth of 5273 feet. The well is lower on structure than the discovery but higher than the Welori Lumber Company 1, recently abandoned.

Natchitoches Parish: E. H. Demitro's Prudential Life Insurance Company 3, NE SE 16-10n-9w, is a new wildcat test, scheduled for the Nacatoch sand.

Caldwell Parish: Shell Oil Company took a drill-stem test in Louisiana Central Oil & Gas Company 1, 36-15n-2e, second test in the newly opeend Vixen gas area, and recovered 14 stands of salt water with a slight odor of gas. Tool was open 12 minutes. Drilling continued below 4720 feet. Top of Wilcox was picked up by electrical survey at 1324 feet, Midway at 2526 feet.

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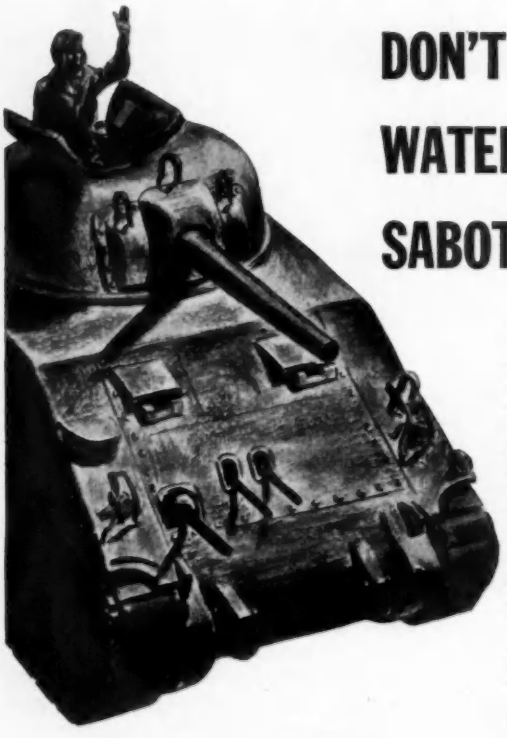

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☆ Arkansas

Wildcat Activity Shows Gain; Columbia Test Has Shows

Wildcat activity increases slightly despite a reported failure; oil shows revive interest in Columbia County wildcat.

Columbia County: McAlester Fuel Oil Company's C. B. Couch 1, C NW SW 11-16s-20w, wildcat, has squeezed several sets of perforations and reperforated with 48 shots from 6757-65 feet. The well is testing after swabbing with shows of oil and gas.

Desha County: W. S. Goodman abandoned S. A. Banks Estate 1, C NW SE 32-9s-4w, wildcat, in the Dumas area, at

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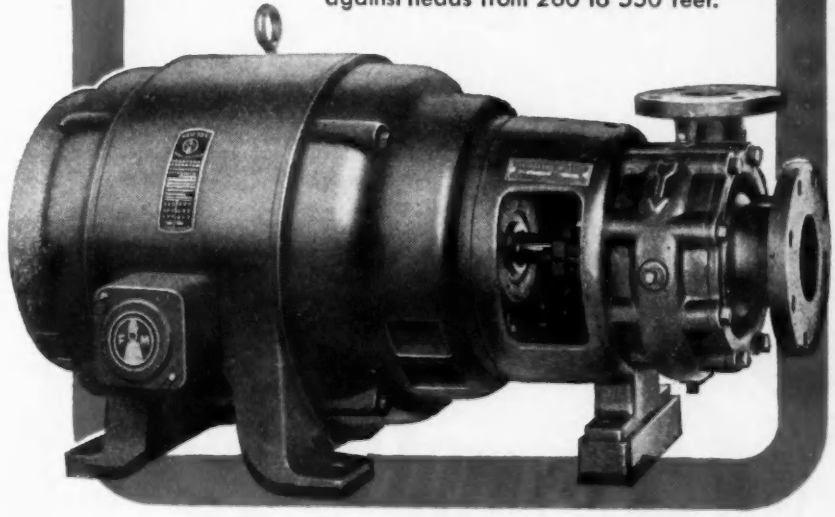

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total depth of 4850 feet in Igneous, topped at 4830 feet.

Miller County: The Carter Oil Company has staked an outpost to the Fouke field, M. Pearman 1, C NW SW SW 27-16s-26w, which will attempt to extend production ¾ mile east.

Carter's S. T. Strohacker 2, C NW SE SW 31-16s-26w, Fouke field test, logged sand showing oil from 3524-29 and 3597-3605 feet, and is preparing to perforate. Total depth reached is 3667 feet.

Barnsdall Oil Company's W. S. Nichols et al 1, C NE NW 20-18s-28w, Smackover wildcat test, is rigging up rotary tools.

Union County: A new Smackover lime wildcat for the county, H. E. Wasson's Union Saw Mill 1-A, C SW SW NE 8-18s-12w, is drilling below 2210 feet in shale. The test is between the Urbana and New London fields.

Brown & Wheeler's Clark 1, C SW SW 22-18s-12w, third test for the Strong field, has derrick up. The field was discovered in December by Root Petroleum Company's Union Saw Mill 1, C NW NW 27-18s-12w, a Smackover producer from 6320-30 feet. The company's second test, Union Saw Mill 2, 27-18s-12w, failed to obtain commercial showings and was abandoned at 6379 feet in June.

Lafayette County: Barnsdall Oil Company-Sohio Petroleum Company's Moore Heirs 1, C NW SE 32-17s-24w, in the McKamie gas-distillate field, is drilling below 7569 feet. Travis Peak was topped at 5750 feet.

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☆ Alabama

Leasing Activity Increases Despite Week's Failures

Leasing activity increases despite 2 failures for the week.

Washington County: Wayne Refining Company junked and abandoned Willie Mitchell 1, SEc NW NE 12-8n-3w, at 4432 feet. Oil shows were reported at 2050-55 feet but continuous cores taken below that point were not encouraging.

J. T. Parks' S. A. Hobson 1, C SW NE 9-8n-2w, only other prospect in the county, is shut down waiting on orders after reporting no shows.

Clarke County: The California Company has issued orders to abandon its wildcat Scotch Lumber Company 1, C NE SW 25-10n-1w, which has had no showings.

Choctaw County: Hunt Oil Company's Boney-Scruggs 1, C SW NE 32-11n-4w, in the expanding Gilbertown field, is installing pump after running tubing and rods. The well is bottomed at 3572 feet.

The Carter Oil Company is waiting on cement at 577 feet in Sam Allman 1, wildcat in NW SW 5-10n-3w.

Fayette County: W. M. Dalton is drilling below 950 feet in shale in Morris White 1, C NW SE NE 21-16s-11w.

Wilcox County: Southern Natural Gas Company's G. W. Morgan, Jr., Estate 1, C SE SE SW 32-12n-5e, cemented 9⅝-inch casing at 1223 feet and is drilling below 1410 feet.

Walker County: Glen D. Rose Oil & Gas Company's Ulysses 1, C N½ NW SE 6-13s-6w, is drilling below 2273 feet.

Florida

Humble Oil & Refining Company's G. C. Carleton Estate 1, C SW NE 34-38s-29e, Highlands County, is repairing tools at 9995 feet in shaly lime. A recent drill-stem test at 9864-93 feet and cores recovered no indications of oil or gas.

Charlotte County: Humble's Lowndes-Treadwell 1-A, C SW NE 17-42s-23e, is drilling below 5560 feet in lime and chalk with no shows reported.

Collier County: Humble's Gulf Coast Realty 7, SW NE 17-48s-30e, newest prospect in the Sunniland field, is drilling below 4651 feet in lime and dolomite without shows.

Calhoun County: The Pure Oil Company is drilling below 1528 feet in St. Andrews Bay Properties 1, 2-1s-11w, scheduled deep wildcat.

Monroe County: O. D. Robinson's State 1, 29-59s-40e, is still fishing for tools at 6085 feet.

Georgia

Charles H. Osmonds' Armstrong-Ellislie 1, 31-5n-2w, Adams County, is drilling below 8700 feet in black shale. Oil shows have been reported in cores from 6473-83 feet. The quality of the shows has not been revealed, but they are the first encouraging indications from the state's prospects in several months.

Laurens County: Callaphor Manufacturing Company's Grace McClain 1, 10 miles east of Dublin, has been abandoned at 2548 feet in granite without shows anywhere along the hole.

☆ Mississippi

West Heidelberg New Pay Has Higher Gravity Oil

New pay section producing higher-gravity oil developed in West Heidelberg area; small commercial producer reported in Rankin County; new oil sand tapped in Tinsley field; another producer noted in Eucutta field.

Jasper County: Southport Petroleum Company's C. C. McDonald 1, SWc NE NW 35-1n-12e, West Heidelberg area, has been completed with production from 72 perforations at 6256-68 feet to establish a new pay zone for the field. Heretofore, production has come from the Eutaw section at approximately 4900 feet. McDonald's newly developed zone is in the Tuscaloosa horizon and is producing oil of 29.5-gravity which is considerably higher than that from other wells in the field.

The well was swabbed in and on initial production test flowed 180 barrels in 24 hours through a ¼-inch choke with tubing pressure of 150 pounds and casing pressure, 178 pounds.

Gulf Refining Company's S. H. McDonald 1, SWc 5-10n-10w, was abandoned below the Massive sand at 7641 feet with no shows indicated. Cores from the Eutaw recovered only shale and sand with salt water and cores taken from the Comanche below 7600 feet showed only red and green shale. Gulf's Morgan Ratcliffe 1, NEc 1-10n-11w, West Heidelberg, also was abandoned after the well tested salt water in the Eutaw section. Angle & Angle's George McCollum 1, S NW SW NW 15-2n-10e, the county's only wildcat, is erecting derrick.

Rankin County: Leonard Jones' E. P. Rainey 1, SW SE NE 14-5n-1e. is installing pump. Commercial production was reported at 2464 feet. When the gas rock was pierced at this depth well started flowing gas, mud and oil. When the well was reopened after being shut in, it flowed some salt water and a heavy grade of oil. Tubing pressure was 800 pounds and casing pressure 500 pounds with fluid standing at top of hole but now flowing out. The Carter Oil Company's Nelson Estate 1, C SW NE NE, Tuscaloosa prospect, is drilling below 7175 feet in red shale with no shows reported. Eutaw was topped at 6312 feet and tested but cores indicated nothing interesting. The Tuscaloosa was cored at 7086-7106 feet and 19 feet of sand was recovered with no shows reported.

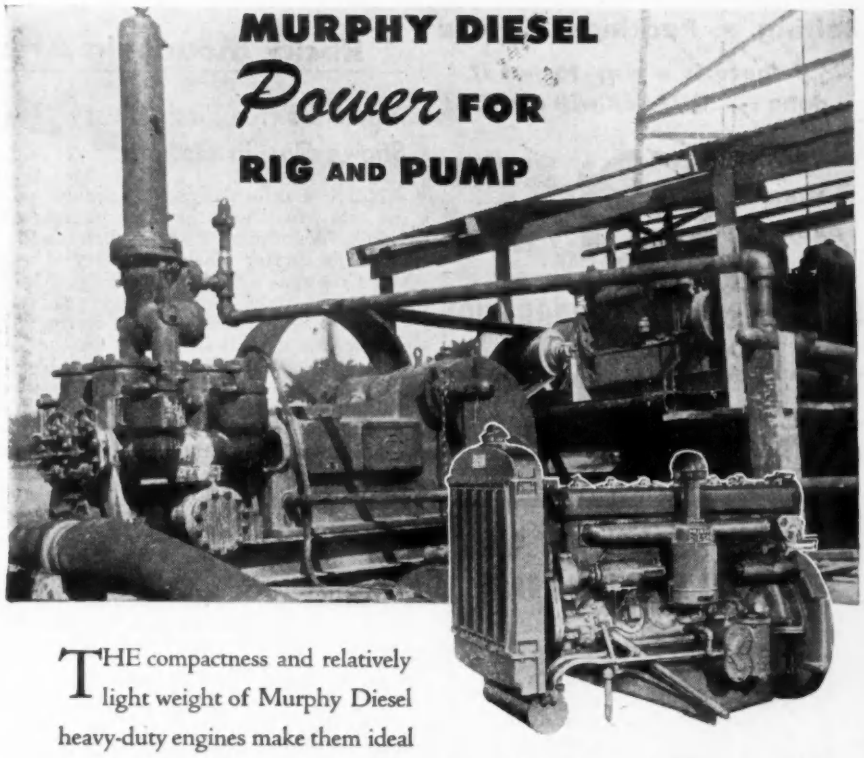
Greene County: Humble Oil & Refining Company's Harry Stover 2, NEc 20-3n-7w, Massive sand prospect, is drilling below 8169 feet in hard shale with no shows indicated from any of the tests along the hole.

Yazoo County: Sohio Petroleum Company's Brumfield 1-B, NW SW 1-10n-3w, an old well in the northwest section of Tinsley field, which is being deepened, reports good oil saturation in sands at 5778-96 feet, a section of the Tuscaloosa horizon. The Brumfield well, which had previously been producing from the Woodruff sand section at 4830 feet, topped Perry oil sand at 5210-40 feet and other producing sands in the field at still lower intervals. If the new sand is sufficiently saturated to develop commercial production it will mean a new lease on life for the field. Several wells are being deepened here and recently the Union Producing Company added 2 more wells to those it plans to deepen. The new tests are the J. M. Twiner 1, 1-10n-3w, and the Mrs. A. Middleton, 25-10n-3w.

Union Producing Company's Jennie Stevens 21, NWc 12-10n-3w, deep test in the Tinsley area, reports very low porosity in the Smackover lime zone in which it is drilling below 11,346 feet. A core from 11,123-32 feet recovered 5 feet of lime with sour gas odor while subsequent tests recovered no shows. If this well is successfully completed it probably will make part of its production from the Perry and Lammons sand zones which are producing elsewhere in the field. On a drill-stem test from 5399-5428 feet, 920 feet of 34.5-gravity oil was recovered in 13 minutes through a ¼-inch choke. A. W. Hutchings Drilling Company's L. E. Montgomery 1, NE NE SE 34-11n-1w, wildcat, is drilling below 6650 feet with Eutaw topped at 6179 feet. Cores from 6179-96 feet recovered sand with no shows indicated.

Itawamba County: Greggtex Gasoline Company's R. L. Burdine 1, NW NE SE 6-11s-9e, the county's only prospect, reports shows at unusually shallow depths. A show of gas was revealed at 1060 feet in the Gasper section and an oil show was reported in the lime section at 1195-98 feet.

Marion County: The Texas Com-



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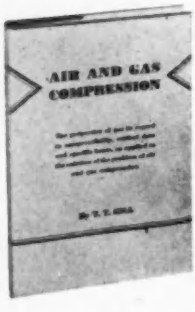

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pany's L. V. Ladner 1, SEc NE 12-1n-17w, which is attempting to extend Baxterville production from Lamar County into Marion County, has run casing to 9012 feet and cemented in preparation for further tests. The well had previously tested encouraging shows of oil, gas and condensate from the Tuscaloosa horizon in the 7500-8000 foot zone.

Wayne County: Gulf's Masonite Corp. "D" 1, NEc SW NE 35-10n-9w, Eucutta field, has been completed with an initial production of 86 barrels of oil per day with production from the Eutaw at 5083-5124 feet. Gulf's N. Davis 1, SWc 11-9n-9w, has been abandoned at 7333 feet as one of the few failures in this prolific field. Elsewhere in the county, Humble is preparing to drill 2 wildcats.

☆ Rocky Mountain Area

North Baxter Basin Test Shows Gas in Dakota

North Baxter Basin, Wyoming, wildcat showing gas in Dakota; Spring Creek, Wyoming, wildcat abandoned.

North Baxter Basin: Transcal Gas & Oil Company's Union Pacific 1, C NE SE 11-19n-104w, Tensleep test on North Baxter Basin, Sweetwater County, Wyoming, on a drill-stem test in the Dakota, top at 3142 feet, from 3142-3170 feet, open 30 minutes, showed gas at an estimated rate of 2,660,000 cubic feet. A previous test from 3035-3045 feet, open 5 minutes, showed about 10 million cubic feet.

Spring Creek: Phillips Petroleum Company's wildcat test on Spring Creek, Fremont County, Wyoming, Unit 2, CNL NE NW 7-28n-92w, has been abandoned in steeply dipping beds of the Sundance formation at a total depth of 4774 feet. Top of the Dakota was logged at 3085 feet and top of the Sundance at 4075 feet.

South Byron: A. B. Cobb's Havig 1, C SW NE 31-56n-96w, wildcat test south of the Byron field, Big Horn County, Wyoming, is running pipe for production test. Saturated cores were recovered in the upper Tensleep at 5702-5713 feet and in the lower section at 5756-5758 feet. Top of the Embar was reached at 5598 feet and top of the Tensleep at 5696 feet. The well was drilled to a total depth of 5767 feet.

Southeastern Colorado: Skelly Oil Company is moving in material for a test of its core-drill block in Baca County, Colorado, at a location in SE SE NW 34-33s-44w.

Oregon Surveys Begin

A Standard Oil Company of California geological survey group is establishing headquarters at Silverton, Oregon, to start preliminary oil surveys of the Williamette Valley. The surveys are expected to take many months.

Texas Field Named

The name Riviera has been given the field discovered by Southern Minerals Corporation's Leo Kaufer 1 in Kleberg County, Lower Texas Coast, Don O. Chapell, chairman of the oil field nomenclature committee of the South Texas Geological Society, has announced.

☆ Illinois Basin

Hamilton County, Illinois, Find Gets Production Test

Hamilton County, Illinois, pool opener given test; Mattoon pool extension completed; new pool opened near Herald pool, White County; Posey County, Indiana, gets new pool.

Illinois

J. W. Rudy's Marlowe 1, NW NW SE 29-3s-7e, 2 miles south of production in the Aden pool, Hamilton County, has set pipe for a test of McClosky lime at 3384-90 feet for production tests of a pool opener. During preliminary work the well swabbed 40 barrels of oil in 24 hours and a slight amount of water. Total depth of the hole is 3430 feet.

Coles County: Howard Brining and others have completed Brining 1, NE NW NE 3-11n-7e, as a southwest extension of the Mattoon pool. The well on initial pump test made 108 barrels of oil and no water in 24 hours from Aux Vases sand at 1942-67 feet. The Cypress sand, which also carried saturation, has not been tested. The same operators have started an east offset, Litwiller 1, NW NE NE 3-11n-7e, and are drilling below 700 feet.

White County: Homer Luttrell's Questell 1, NE NE NW 36-6s-9e, is opening a new pool 1½ miles east of the Herald pool. During a 1-hour drill-stem test at 2294 feet the well showed 900 feet of gas, 615 feet of oil, and 45 feet of oil and gas cut mud. Operator is running casing for production test.

Gallatin County: Holleman and Hays' Jones 1, NE NE NE 22-7s-9e, wildcat test 4 miles west of New Haven production, has set casing for test of apparently commercial Aux Vases sand at 2904-12 feet. On a drill-stem test the well made gas in 4½ minutes and flowed oil in 35 minutes.

Indiana

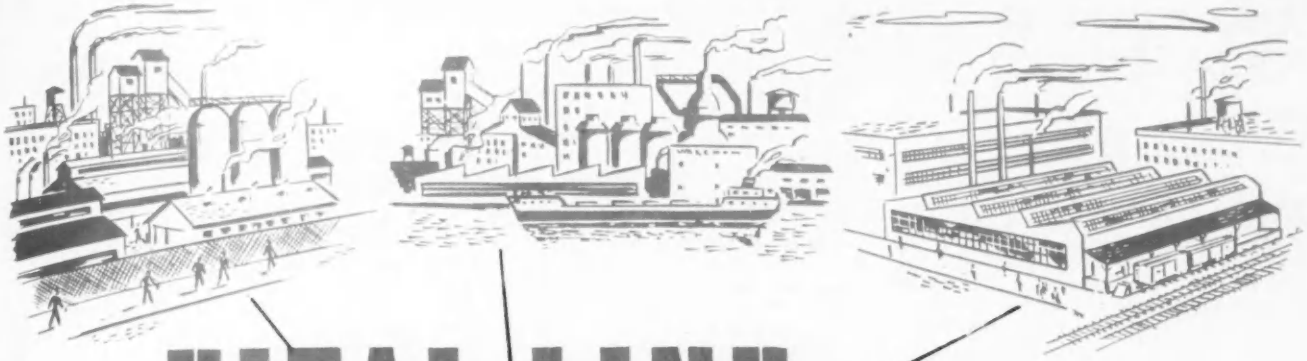
Walter Duncan is opening a new pool with Weinschein 1, NE NE SW 16-7s-12w, Posey County, 3 miles east of Lamont pool production and 5 miles north of production in the Smith-Mills pool of Kentucky. Casing has been set to 2694 feet and the operator is waiting on cement. During a 1-hour drill-stem test of McClosky pay at 2703-12 feet, the well gassed in 6 minutes and then made 1860 feet of oil and 62 feet of oil-cut mud.

☆ California

Cymric Field Discovery Flows 1440 Barrels Daily

Discovery well in new deep zone of Cymric field flows 1440 barrels daily of 33-gravity oil; additional acreage at Mountain View proved up by new 1000-barrel well; another 1000-barrel producer brought in from fractured Schist at Edison; Coalinga well comes in flowing 734 barrels daily.

Kern County: Discovery of a new pro-



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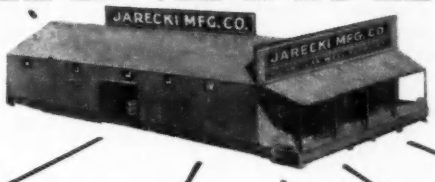

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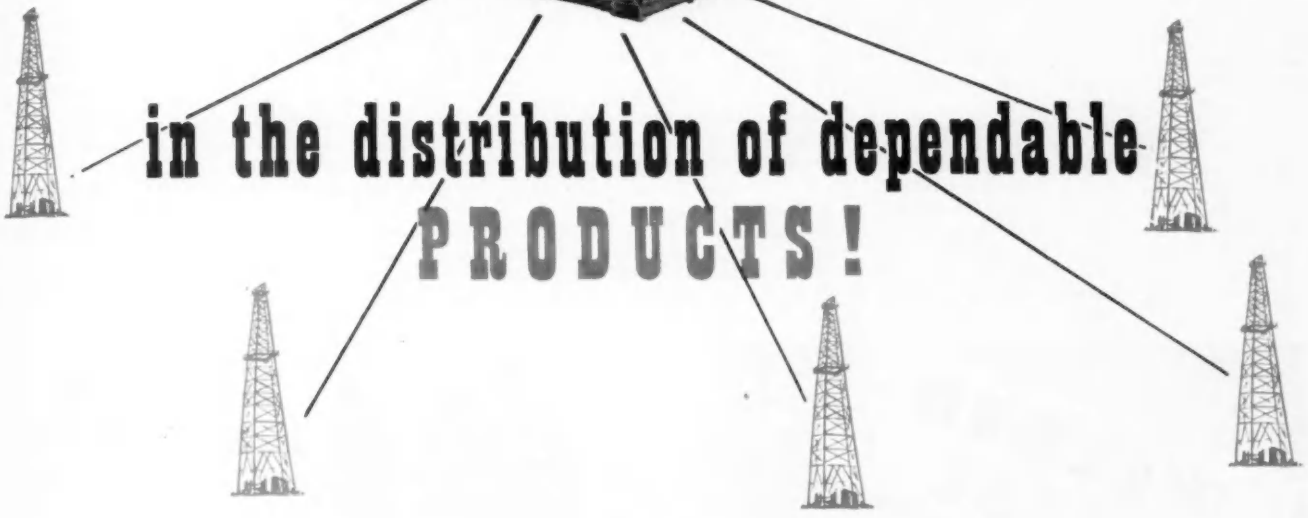

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BRANCH STORES AT ALL IMPORTANT PLACES IN THE OIL COUNTRY

ducing horizon below the old shallow zones in the Cymric field a week ago by Union Oil Company, has put new life in this almost-forgotten area. On a recent production test Union's discovery well, Anderson 45-26, 26-29s-21e, flowed at a rate of 1440 barrels per day of 33-gravity oil through a ½-inch choke. The well found production between 3580 and 3605 feet in what may be a stray sand above the main body of the Carneros sand of middle Miocene age. Union has staked location for a second well, Anderson 55-26, and Standard Oil Company of California is starting a well 1 location northwest of Union's discovery. Standard has also announced location for Fitzgerald 55, a wildcat test 1 mile northeast of the Cymric field in 24-29s-21e. Other operators with acreage in the general area are Honolulu Oil Corporation, The Superior Oil Company, Independent Exploration Company, and Oceanic Oil Company.

J. Paul Getty's Derby 23, a semi-wildcat test in 33-30s-29e, southwest area of the Mountain View field, produced at the rate of 1000 barrels per day of clean oil on a formation test of transition zone (Chanac-Santa Margarita) between 5450 and 5540 feet. The find proves up an additional 100 acres in this part of the field. Getty acquired the lease from Independent Exploration Company.

The Edison field, nearby, also came into the limelight when H. H. Magee, Operator's Dougherty 3 in 14-30s-29e, on a formation test of fractured schist between 2570 and 2626 feet, flowed at the rate of 1000-1500 barrels per day of clean 19-gravity oil. This appears to be an excellent well for this field. Operator's Brockman 3 in Sect. 13 is currently producing 395 barrels per day entirely from fractured basement.

Western Gulf Oil Company continues to work on its L. A. Club 67-6 in 6-32-27, Paloma field. The well recently swabbed mud to 8500 feet and then started showing some oil. Well was later swabbed to 10,400 feet recovering 12 barrels in 24 hours of 24.8-gravity oil. The Symons sand, topped at 11,838 feet, remains to be tested.

Fresno County: Completion by Standard of an unusually good well in the old Coalinga field has attracted attention. The company's 37-1C in 1-20s-15e was completed, flowing 734 barrels per day of 31-gravity oil, 10 percent cut and 400,000 cubic feet of gas. Total depth is 4200 feet, with 5½-inch casing, including 112 feet of perforated, landed on bottom. Location is 342 feet south and 2203 feet east of the northwest corner of 1-20-15.

Los Angeles County: Nothing of interest turned up in several deep tests reaching critical depths in Southern California. Deepest of these, Shell Oil Company's Alamitos 48A at Long Beach, has passed 13,000 feet. At Seal Beach Shell's Bryant 3-1 is drilling and spot coring below 10,200 feet. Standard is spot coring below 11,090 feet in its Elkins 1 in the Fillmore area, 6-3n-19w, and The Ohio Oil Company is approaching 10,000 feet in its Gardena Community 1 in 24-3s-14w, deep test of the Gardena area.

Union Pacific Railroad's aggressive drilling program in the Wilmington field was given new impetus when locations for 20 new wells were staked. The Wilmington field continues to lead the state in crude oil production, output for last week being approximately 100,000 barrels a day.

☆ Canada

McMurray Separation Plant To Be Replaced by Abasand

Problems relating to production from McMurray Tar Sands of Northern Alberta have been lessened, at a cost to the Dominion Government of $1,750,000, private capital is taking over, and output of petroleum products on a commercial scale is expected to get under way about the end of this year.

The new operations will be undertaken by a reorganized, privately financed Abasand Oils Ltd., the concern which expended about $1,000,000 on Tar Sands pioneering prior to 1943. Abasand is taking over the Dominion-finaced physical assets on a long-term partial repayment basis, payable from anticipated revenue.

Abasand will immediately replace the 600-barrel capacity separation plant, destroyed by fire on June 16, with a 1000-barrel capacity plant costing $350,000. Construction is expected to be completed before year's end. The refinery, which has a capacity of 1200 barrels daily, will be taken over intact.

Transportation costs to market are expected to be arranged through the government. Primary move would be a cut in freight rates on the Northern Alberta Railway, linking the Abasand operations at Waterways with Edmonton.

Imperial Oil Ltd., through its subsidiary Northwest Company, has taken up oil and gas rights covering 158,000 acres on the Central Alberta Plains, west and south of the Wainwright Buffalo Park.

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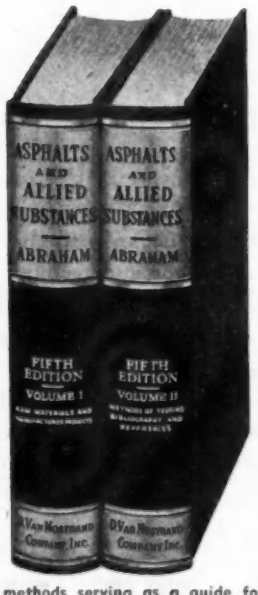

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EXPLORATORY COMPLETIONS

ALABAMA WILDCAT

Washington County—Failure: Wayne Ref. Co.'s Willie Mitchell 1, sec nw ne 12-8n-3w, Eutaw 3323 ft, Tuscaloosa 3860 ft, abnd 4432 ft.

ARKANSAS WILDCAT

Desha County—Failure: W. S. Goodman's S. A. Banks Est. 1, nw se 32-9s-4w, Midway 3112 ft, Arkadelphia 3847 ft, Nacatoch 4017 ft, Saratoga 4296 ft, base Annona 4510 ft, Eagle Hills 4812 ft, Igneous 4830 ft, abnd 4850 ft.

CALIFORNIA WILDCATS

Kern County—Oil Discovery: Union Oil Co.'s Anderson 45-26, 26-29s-21e, Miocene 3580-3605 ft, flow 1400 bbls 33-gr oil, 809,000 gas, td 3610 ft.

Kern County—Failures: Continental's Porter 1, 28-30s-29e, Mountain View area, abnd 4699 ft, redrilled to 4642 ft.

Hancock Oil Co.'s Muller 1, 12-30s-28e, abnd 5390 ft.

Rothschild Oil Co.'s Smith 1, 11-26s-27e, Dyer Creek area, abnd 2357 ft.

Tulare County—Failures: Jergins Oil Co.'s Cloer 1, 23-22s-26e, Pixley area, Olcese 2305 ft, abnd 2863 ft.

Tide Water's Hoffman 24, 33-21s-25e, Tipton area, Vedder 4417 ft, Schist 5063 ft, abnd 5148 ft.

San Joaquin County—Failure: Shell's Wright 1, 32-2s-6e, Banta area, gun perf 2500-2670, 2295-2305 ft, abnd 5321 ft.

GEORGIA WILDCAT

Laurens County — Failure: Callaphor Mfg. Co.'s Grace McClain 1, 10 mi e of Dublin, abnd in granite 2548 ft.

ILLINOIS WILDCATS

Clinton County — Failure: Joe L. May's Prashun Est. 1, sw sw sw 31-2n-2w, abnd 2631 ft.

Jefferson County—Failure: J. V. Canterberry's Ross 1, se se se 7-3s-4e, abnd 3164 ft.

Marion County—Failures: A. J. Hammer et al Meador 1, nw ne nw 25-1n-4e, abnd 3018 ft.

Ryan Oil Co.'s Galbreath 1, se se nw 26-3n-1e, abnd 2012 ft.

Moultrie County—Failure: H. M. Williams' Searight 1, nw nw sw 27-14n-5e, abnd 1928 ft.

Perry County—Failure: Magnolia's Jausel 1, nw nw se 18-4s-3w, abnd 1624 ft.

Richland County—Failure: W. W. Shaffer et al's Everson 1, sw ne se 23-3n-9e, abnd 3120 ft.

Washington County—Failure: Max Conray's Purjek 1, ne se nw 31-2s-1w, abnd 1548 ft.

White County—Failure: Sam A. Gilpin, Jr.'s Williams 1, sw sw se 6-5s-9e, abnd 3382 ft.

White County—Oil Discovery: Skelly's Kisner 2, se sw se 31-5s-9e, Av 3020-26 ft, flow 105 bbls, td 3050 ft.

INDIANA WILDCATS

Gibson County—Failure: E. L. Shaudy's Kuester 1, se sw se 26-3s-10w, abnd 615 ft.

Fountain County — Failure: Fountain Oil Syndicate's Bilsland 1, ne ne ne 22-20n-9w, abnd 2215 ft.

Perry County—Failure: H. L. Cokes et al's Gleeson 1, sw se nw 15-5s-2w, abnd 760 ft.

Posey County—Failures: Ryan Oil Co.'s Doll 1, sw sw nw 12-4s-13w, abnd 2963 ft.

Nash Redwine's Alldridge 1, nw nw ne 3-7s-14w, abnd 2933 ft.

Posey County—Gas Discovery: J. T. Peek's Reineke 1, se se se 12-6s-13w, Penn 772-780 ft, flow 1,650,000 gas, td 780 ft.

KANSAS WILDCATS

Pawnee County — Failure: Helmerich & Payne's Johnson 1, sw sw se 14-22s-16w, Lans 3622 ft, Simp 4044 ft, Arb 4074 ft, abnd 4119 ft.

Rice County—Failure: Plains Explor. Co.'s Habinger 1-B, ne se nw 7-18s-9w, Cong 3229 ft, Arb 3252 ft, abnd 3282 ft.

Sumner County—Failure: El Dorado Ref. Co.'s Holman 1, se se ne 26-33s-2e, Lay 2694 ft, KC 2870 ft, Bart 3295 ft, Miss 3314 ft, abnd 3326 ft.

Trego County—Failure: Ohio's Kollsch 1, nec 2-12s-22w, Lans 3624 ft, Arb 4047 ft, abnd 4175 ft.

NORTH LOUISIANA WILDCATS

Bossier Parish—Failure: Barnsdall-Sohio's Welori Lbr. Co. 1, c se nw 20-20n-12w, tested sso, small show gas, abnd 9103 ft, may use as input well.

Madison Parish—Failure Sinclair Prairie's Singer Mfg. Co. 1, c se se 14-15n-12e, Wilcox 2640 ft, Midway 4772 ft, Tuscaloosa 6136 ft, U. Cret, 5164 ft, abnd 7032 ft.

Tensas Parish — Failure: Shamrock O&G Co.'s Panola Co. Ltd. 1, 34-13n-12e, abnd 9237 ft.

SOUTH LOUISIANA WILDCATS

Rapides Parish—Flatwoods Oil Discovery: Louisiana Ld. & Expl. Co.'s J. A. Bentley, Jr., Tr. 2-A-2, c ne¼ nw¼ 36-5n-5w, 1977 e 661 s of nwc sect 36, Wilcox 3707 ft, perf 6488-94 ft, pump 48 bbls 48-gr, some wtr, td 7285 ft.

St. Martin Parish—Failure: Yegua Corp.'s Olivier & Burdin 1, start nec sect 48 go s 68° 27 mins w alg nl sect 48 for 1048 th ar ra s 21° 33 mins e 1675 in 48-7s-6e, perf 10,488-98 ft, abnd 10,924 ft.

SOUTH LOUISIANA NEW PAY TEST

Terrebonne Parish — Lake Barre Distillate Discovery: Texas Co.'s State-Lake Barre 44, n 20° e 1700 fr well 37, th n 53° 06 mins e 8315 fr USCGS Mon "Terrebonne" in 19-21s-20e, perf 11,772-88 feet, flow 41 bbls 54-gr cond, ⅛-in, gor 46,000/1, tp 4050 lbs, td 13,259 ft.

MONTANA WILDCATS

Blaine County—Failure: Carpenter, Harris & Unruh, c se 32-36n-21e, Cherry Ridge, abnd 1036 ft.

Pondera County—Failure: Texas Co.'s Tribal-284 1, c nw nw 11-30n-7w, Birch Creek, Sunburst 3750, U. Cut Bank 3850-3858, L. Cut Bank 3858-3875 ft, abnd 4145 ft.

NEW MEXICO WILDCAT

Lincoln County—Failure: Stanolind et al's State-Picacho Unit 1, 660 snl 760 ewl 10-12s-18e, elev 5903 ft, Glorietta 352 ft, Yeso 421 ft, granite sand 2315 ft, abnd in quartzite 2841 ft.

OKLAHOMA WILDCATS

Canadian County — Failure: Texas Co.'s Boylsin 1, ne se nw 6-11n-8e, Booch 3560 ft, Gil 3675 ft, abnd 3850 ft.

Kay County—Failure: Jenkins' Turley 1, nw ne sw 1-27n-2e, abnd 2008 ft.

Noble County—Failure: Feagin Oil Co.'s Will 1, nw ne ne 15-21n-2e, Perry 2678 ft, Chat 4370 ft, 1st Wx 4472 ft, 2nd Wx 4516 ft, abnd 4516 ft.

Okfuskee County—Failure: W. B. Pine Ests.' Thomburg 1, ne ne nw 35-12n-10e, Gil 2790 ft, abnd 3164 ft.

Oklahoma County—Failure: Big Chief Drlg. Co.'s Hayes 1, ne ne sw 8-11n-4w, abnd 7941 ft.

Pawnee County—Oil Discovery: Deep Rock et al's Donohoe 1, nw nw nw 27-23n-3e, Bart 3580-3601 ft, pump 41 bbls 37-gr oil, 56 bbls wtr, td 3601 ft.

Pottawatomie County — Failure: Ashland O&R Co.'s Loman 1, ne sw sw 1-10n-4e, abnd 4964 ft.

WEST TEXAS WILDCATS

Borden County—Failure: Standard of Texas' Canning 1, 466 out nec se H&TC Ry. 103, blk 25, elev 2362 ft, li 2110 ft, abnd 4346 ft.

Cochran County—Oil Discovery: Stanolind's Edwards 1, 660 ewl 1980 snl PSL 13, blk L, 10½ mi w of prod, elev 3807 ft, anhy 2370 ft, Yates 3010 ft, San Andres 4310 ft, pump 386 bbls 32.2-gr oil, 8.64 bbls bs&w, 2500 gals acid San Andres 5025-80 ft, td 5111 ft.

Dawson County—Failure: W. H. Black et al's Flenniken 1, c se ne T&P Ry. 11, blk 36, T-4-N, elev 2896 ft, anhy 1760 ft, Yates 2500 ft, brown li 3590 ft, San Andres 4330 ft, abnd 5803 ft.

Irion County—Oil Discovery: Shell's Tankersley 2, c sw sw GC&SF Ry. 10, 5-2/3 mi se Mertzon pool, nearest, elev 2280 ft, San Andres 625 ft, detrital 7268 ft, Ellenburger 7279 ft, Hickory (Cambrian) 8364 ft, flow 96 bbls 45.4-gr oil, 6 bbls bs&w, ⅛-in, gor 384/1, 2700 gals acid Strawn perf 7195-7200 ft, td 8408 ft, pb 7246 ft.

Winkler County—Failure: Richardson & Bass' Sanford 1, c ne se PSL 25, blk B-2, elev 2947 ft, San Andres 3960 ft, San Angelo 5090 ft, Wolfcamp 7490 ft, Permian-Mississippi contact 7600 ft, Woodford 7880 ft, Fusselman 8930 ft, Montoya 9275 ft, Simpson 9680 ft, abnd 9772 ft.

WEST TEXAS OUTPOST

Garza County — Hitt Extension: Honolulu Oil Corp.-Devonian Oil Co.'s Richardson 1, 440 out swc sect 1282, BS&F Ry. sur, 1½ mi se Hitt pool, elev 2944 ft, anhy 1300 ft, San Andres 2780 ft, pump 83 bbls 37.2-gr oil, 6 bbls wtr, 1000 gals acid 3511-25 ft.

WEST CENTRAL TEXAS WILDCATS

Jones County—Oil Discovery: S. B. Roberts et al's O. J. Cooper 1, 480 ft out sec sw T&P Ry. 29, blk 15, twin to 4935-ft Bend failure, elev 1691 ft, Flippen 2312 ft, Swastika 2327 ft, flow 451 bbls 40-gr, 1-in, 1500 gals acid open hole 2327-32 ft.

Jones County—Failure: Texas Co.'s Johnson 1, 330 ft out sec BBB&C Ry. sect 178, elev 1580 ft, anhy 507 ft, Dothan 1328 ft, Noodle Creek 1424 ft, Saddle Creek 1650 ft, Palo Pinto 3288 ft, abnd in Ellenburger 5618 ft.

Shackelford County—Failure: Roeser-Pendleton-Continental's Cook 1-A-63, 157 wel 1597 nsl E.T. Ry. sect 63, elev 1526 ft, abnd 1535 ft.

Stephens County—Failure: Lone Star Prod. Co.'s (was C. Andrade's) Walls 1, (OWDD) c ne ne sect 13, O.A.L. Sur, elev 1366 ft, depleted gas at 4120 ft and deepened, Bend 3616 ft, Barnett 4210 ft, Ellenburger 4406 ft, abnd 4471 ft.

SOUTH CENTRAL TEXAS WILDCATS

Atascosa County—Failure: F. A. Callery's Ruth D. Davis 1, 467 fr w&sl 553-ac lse; J. A. Navarro sur, abnd 5367 ft.

Bastrop County—Failure: George A. Gage's J. M. Stark Est. 1, start Austin-Bastrop hwy go s alg wl 67.7-ac lse 750 th e at ra 600 to lcn in J. A. Navarro sur, abnd 1367 ft.

Val Verde County—Failure: B. E. Wilson's Wilson & Hodge 1, 1082 fr el 420 fr nl sur 57, blk 4, 19,000-ac lse, abnd 430 ft.

SOUTHWEST TEXAS WILDCATS

Duval County — Failure: Glenn H. McCarthy's Clara Driscoll 1, 1650 fr wl 2310 sl S. R. Peters sur 10, 640-ac lse, 2 mi w Fitzsimmons fld, abnd 4035 ft.

Starr County—Failure: John F. Camp & Sons' Prudencia C. de Garcia 1, 330 fr n&el 80-ac lse Sh 5-C, abnd 4535 ft.

Webb County—Failure: F. H. Lefevre's Pedro Leal et al 1, 330 fr n&wl se¼ J. Poitevent sur 460, elev 796 ft, Pettus 2689 ft, abnd 2743 ft.

Zapata County—Failure: Ralph E. Fair's Santiago & Francisco Cuellar 1, (OWDD) 293 fr nw&sel blk 14 sh 4, Porc 36, 180-ac tr, elev 357 ft, otd 3006 ft, abnd 5144 ft.

LOWER TEXAS COAST WILDCATS

Brooks County—Failure: Standard of Tex.'s Braulia G. de Garcia Lse 1, 1400 w 2200 s of se interior cor 2161-ac lse, La Encantada Gr, 45 13 n ne of Garcia 4, elev 300 ft, abnd 10,500 ft.

Dewitt County — Gas-Distillate Discovery: Pure's Eugene Rice 1, 466 fr s&el 145.1-ac lse, James May sur, elev 248 ft, perf 8160-90 ft, flow 84 mln gas, open, 26 bbls 52.2-gr cond, ⅛-in, td 9185 ft.

Goliad County—Boyce Gas Discovery: Magnolia's W. W. Boyce 1, 660 fr ne&nwl 770.58-ac lse, CCSD&RGNG sur, perf 7470-90 ft, flow 110 mln gas open, td 8500 ft.

Karnes County—Distillate Discovery: Magnolia's D. O. Klingeman 1, 467 fr nly nw&swl 672-ac lse, J. Bradberry sur, perf 117 shots 7880-7914 ft, flow 414 bbls 52.9 cond, ⅜-in, 4,925,000 gas, 7.7 bbls wtr, td 8000 ft.

LOWER TEXAS COAST NEW PAY TEST

Refugio County—La Rosa Gas-Distillate Discovery: Stanolind's J. W. Spaulding 9, 564 fr wl 1228 fr sl 160-ac lse in nw¼ sect 3, Johnson & Pugh subdn, nw well 6, perf 6775-81 ft, flow 22,300,000 mln gas open, 189 bbls 62-gr cond 5/16-in, td 9172 ft.

UPPER TEXAS COAST WILDCATS

Ft. Bend County—Failure: Gulf's T. W. Davis 79, start n cor Michael Young sur go 6223 sw alg nwl 859.2 se at ra 3330 n and little e of Davis 46, 2526-ac lse, abnd 6404 ft.

Jefferson County—Failure: Glenn H. McCarthy's E. C. Hankamer & T. S. Reed 1, start nly swc V. Tinkle 188-ac tr go n alg wl 2100 th w at ra 660 to lcn on 150-ac lse in J. Dyches sur, abnd 7515 ft.

Liberty County—Failure: Sun's Cousins 1, 330 fr nl 330 fr swl 200-ac lse 3050 n of sl J. Knight sur Moss Hill area, abnd 8517 ft.

EAST TEXAS WILDCATS

Rusk County — Gas-Distillate Discovery: H. C. Owens et al's Rousseau 1, 330 snl 1510 ewl Robt. Gilkerson sur, 4½ mi ne Minden, elev 595 ft, Georgetown 3380 ft, Goodland 4045 ft, Glen Rose 4510 ft, massive anhy 6020-6276 ft, Hill 6300 ft, Gloyd 6376 to 6425 ft, Pettit 6988 ft, Travis Peak 7338 ft, 3,100,000 gas, 25 bbls dist per mln, spray of salt water, open flow, 2000 gals acid Travis Peak perf 7382-89 ft, td 7512 ft.

Wood County—Failure: Algord Oil Co.-Homer W. Snowden's Jordan 1, 660 out sec John Roddin Sur A-494, elev 495 ft, Nacatoch 2550-3058 ft, Pecan 3850 ft, Gober 4950-5062 ft, Austin 6648-6712 ft, abnd 7515 ft.

EAST TEXAS NEW PAY TEST

Freestone County — Fairfield Shallow Gas Discovery: Texas Co.'s Sneed 1, 1400 snl 600 wel of B. Green sur, 4200 s by w of Travis Peak gas-distillate disc, elev 387 ft, Austin 3415 ft, Woodbine 4194 ft, Buda 4632 ft, Georgetown 4800 ft, Paluxy 5737 ft, Glen Rose 5952 ft, massive anhy 7048-7165 ft, Rodessa 7260 ft, Pettit 7727 ft, Travis Peak 7920 ft, 27,000,000 gas, 2 bbls 54-gr distillate per mln, Woodbine perf 4198-4207 ft, td 8292 ft, pb 4218 ft.

NORTH TEXAS WILDCATS

Archer County—Failures: E. P. Bowen et

al's Abercrombie 1, 1260 nsl 150 wel of sw¼ blk 70, J. W. Harris sbdn, abnd 1515 ft.

Ray Horany et al's Kunkel 1, 1260 nsl 150 ewl of Jacob Staderford sur A-394, abnd 1200 ft.

Clay County—Failure: Kadane-Griffith Oil Co.'s Rigsby 1, 330 out nwc sect 18, Specht-McCutcheon sur, elev 1007 ft, Ellenburger 3289 ft, abnd 3560 ft.

Cooke County — Oil Discovery: Douglas Helms et al's Lee Blocker 1, 250 fr nwl 400 fr swl of 81-ac tr, or 1470 fr nwl 3200 fr nel J. Rodriquez sur A-880, elev 888 ft, pump 31 bbls oil, 70% bs&w, sand 1588-92 ft, td 1602 ft, pb 1692 ft.

Throckmorton County—Gas Discovery: H. T. Merrill et al's R. H. Brown 1, 1540 nsl 150 ewl TE&L Co. sect 1613, elev 1336 ft, 2,000,000 ft dry gas, sand 900-12 ft.

Wichita County — Failures: Bridwell Oil Co.'s Gillis 1, 1300 nsl 1500 ewl sect 11, AB&M Ry. sur A-339, abnd 2129 ft.

W. H. Spradling et al's J. B. Spradling 2, 450 nsl 750 wel blk 306, Waggoner Colony Lands, abnd 1950 ft.

Young County — Oil Discovery: Fain-McGaha's Prideaux 2, 150 n 1150 w of nwc sect 2, A. Williams-C.T. Ry. sur A-2288, but in A. Rohus sur A-240, elev 1076 ft, flow 404 bbls 42-gr, GOR 420/1, natural via ½-in, Strawn sand 3622-37 ft.

Young County—Failure: O. K. Drilling Co.'s West 1, 150 e 100 s of nec sect 1366, but in TE&L Co. sec 3401, abnd 965 ft.

NORTH TEXAS OUTPOSTS

Cooke County—Sivells Bend Extension: Sun's Field 1, 467 out of m/e/nec of 250-ac tr, M. J. Eason sur A-346, 1¼ mi s by w of prod, elev 902 ft, Strawn pay 6390-6406, 6670-6702 ft, flow 244 bbls 41-gr, ⅜-in, gor 400/1, Beasley sand perf 6670,82 ft, td 7024 ft.

Montague County — Stoneburg Extension: Continental-W. B. Omohundro's E. S. Johnson 1, 2450 ewl 2750 snl sect 6, Limestone CSL sur, 1¼ mi n by e Stoneburg pool; 2 mi nw Hildreth fld and slightly higher structurally, elev 917 ft, K-M-A lime 3870 ft, Bend 5920 ft, flow 1872 bbls 42-gr, gor 722/1, 30/64-in choke natural, Bend perf 5996-6018 ft, td 6145 ft.

WYOMING WILDCAT

Freemont County—Failure: Phillips' Unit 2, c ne ne nw 7-28n-92w, elev 6576 ft, Spring Creek, Dakota 3085, Sundance 4075 ft, abnd steeply dipping beds of Sundance 4774 ft.

WESTERN CANADA WILDCAT

South Alberta Plains—Wrentham Failure: B. & B. Syndicate's No. 1, lsd 1 29-5-17w4th, abnd 3455 ft in Madison lime.

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WILDCAT STARTS

ARKANSAS

Union County: H. E. Wasson's Union Saw Mill A-1, c sw sw ne 8-18s-12w, dr 2200 ft.

CALIFORNIA

Kern County: J. H. Maurer and A. C. Fisher's Jean 2, 15-26s-28e, lcn.

Solano County: Amerada's Wineman et al 1, 35-6n-2e, rur.

Standard of California's Fitzgerald 55, 24-29s-21e, lcn.

San Luis Obispo County: Amerada's Tar Springs Ranch 2, 23-32s-14e, lcn.

Norris Stamping & Mfg. Co.'s Clark 1, 3-27s-13e, rur.

Santa Barbara County: Union Oil Co.'s Moran 1, 1-4n-19w, lcn.

COLORADO

Baca County: Skelly's 1, se se nw 34-33s-44w, mim.

ILLINOIS

Clark County: Nat. Consumers Oil Co.'s Hargrove 1, sw nw se 16-11n-12w, dr 379 ft.

Clay County: H. M. Miller's Fowler 1, ne se 10-3n-3w, dr.

Edgar County: A. M. Myers' Tate 1, nw ne se 11-12n-14w, dr.

Effingham County: H. L. Cullett's Counts 1, se sw ne 30-6n-7e, lcn.

Washington County: Magnolia's Hemminghaus Hrs. 1, sw nw nw 3-3s-3w, dr 677 ft.

White County: Ryan Oil Co.'s Stone 1, nw nw se 22-4s-9e, dr.

E. O. Olds' Hanks 1, sw sw sw 2-4s-10e, dr 336 ft.

INDIANA

Posey County: L. E. Bietzman's Juncker 1, nwc 9-6s-12w, lcn.

KANSAS

Clark County: Helmerich & Payne's Porter 1, nw nw se 3-31s-21w, lcn.

Pawnee County: J. M. Huber Corp.'s Katchelman 1, nec 34-22s-16w, lcn.

Pratt County: Mid-Continent's Eubanks 1, nw nw sw 34-28s-12w, lcn.

KENTUCKY

Henderson County: W. F. Bilsky et al's Royster 1, 13-O-23, lcn.

NORTH LOUISIANA

Madison Parish: Murphy-Sun's Joe Mahony 1, 10-17n-11e, Paluxy test.

SOUTH LOUISIANA

Calcasieu Parish: Union Sulphur Co.'s Bordages 1, 3388.2 n 1800.1 e of swc se¼ 5-10s-9w, Hackberry test.

MISSISSIPPI

Montgomery County: J. W. Black's J. D. Patterson 1, nec ne sw 25-19n-6e, lcn.

Wayne County: Humble's G.M.&O. Ry. E-1, 30-9n-7w, lcn.

MONTANA

Glacier County: Carter Oil Co.'s Weaselhead 1, sw ne 28-34n-12w, Milk River anticline, lcn.

NEW MEXICO

Eddy County: Sunray Oil Corp.'s Foster 1-B, c se ne 34-17s-31e, San Andres test.

OKLAHOMA

McClain County: Carter's Hawkins 1, ne ne 34-6n-3w, c&p.

Murray County: Sinclair-Prairie's Youngblood 1, nw sw sw 13-1n-1e, lcn.

Noble County: J. E. Trigg et al's Cottle 1, sw nw se 8-21n-2w, c&p.

Pawnee County: H. L. Berkey's Shadlow 1, se sw se 29-22n-3e, rig.

Sunray's Gilbert 1, nw sw ne 30-23n-3e, c&p.

Pottawatomie County: Chas Jenkins et al's Goodnight 1, se sw se 33-6n-3e, dr 2250 ft.

Seminole County: Mid-Continent's Patterson 1, sw ne se 29-9n-7e, c&p.

WEST TEXAS

Ector County: Humble's H. E. Cummins 1, c sw sw T&P Ry. 11, blk 45, T-1-N, 1¼ mi se N. Goldsmith fld, 9500-ft Ellenburger test.

WEST CENTRAL TEXAS

Mills County: A. R. Forster, tr's J. A. Holland 1, 600 nsl 450 ewl of sect 1, T&NO Ry. sur, 3000-ft cable test.

SOUTH CENTRAL TEXAS

Bastrop County: Continental's Willie Malina 1, 330 fr s&el 100-ac tr, Andrew Graham sur, 9000-ft test.

Lee County: Seaboard of Dela.'s Paul Hendrick 1, 2500 fr nwl 3500 fr nel of Frans Potthast sur 660 fr sel 5661ac lse, 9000-ft test.

SOUTHWEST TEXAS

Duval County: Argo Oil Corp.'s Leroy Denman 1, 330 fr n&wl lot 3 blk 14, on 542.82-ac lse, Jose Marcelo Hinojosa Gr, Realitos subdn of Copita Farm & Garden Tr, 5200-ft test.

LOWER TEXAS COAST

Brooks County: R. E. Bair's Jose Garcia 1, 467 fr sl 1400 fr wl 214.5-ac lse, L. A. Mestena Gr sect 1-A, Alta Mesa area, 6500-ft test.

Jackson County: Rowan & Hope-Newman Bros.' Hollingsworth Rch. 1, 467 fr ne&nwl blk, 321-ac lse, Eli Mercer sur, coring 2396 ft.

Karnes County: Gulfshore Oil Co. et al's A. J. Kolodizie 1, 1692 fr sel 467 fr swl 140.67-ac lse, Louis Manchaca Gr, Falls City area, 6300-ft test.

Lavaca County: Seaboard of Tex.'s E. Sebastian 1, 660 fr ne&sel 107-ac lse, J. Lyons sur, 8500-ft test.

UPPER TEXAS COAST

Brazoria County: Glenn H. McCarty's S. W. Hudgins 1, 330 ne at ra fr Oyster Crk, start n cor 1886.24-ac lse go 7030 sw alg nwl 660 se at ra to lcn, B. T. Archer sur, dr 200 ft.

Matagorda County: Atlantic's Craig Est. 1, 3050 fr nel 1967 fr nwl 833.75-ac lse, T. Williams sur, Hawkinsville area, 9000-ft test.

EAST TEXAS BORDER COUNTIES

Marion County: W. C. Stewart Co.'s Brown Est. 1, 1320 fr sl 1665 fr wl 100-ac tr, Jos. Watkins sur, lcn.

EAST TEXAS

Navarro County: Tex Harvey Oil Co.'s J. W. Edens 1, 330 out swc blk 12, or 2050 fr sel 5400 fr swl M. Shires sur, 1 mi n Angus, Woodbine test.

NORTH TEXAS

Archer County: C. M. Burnett et al's Mary Pechacek 1, 1730 wel 3435 snl of M. Manning sur A-128, 1000-ft cable test.

Wayne King et al's W. S. Hale 1, 150 out nwc sect 95, J. W. Harris sbdn, 1500-ft rotary test.

Robertson Dr. Co.'s J. T. Richardson 1, 1320 snl 330 wel blk 14, J. Scott sur. A-374, 6000-ft Ellenburger test.

R. A. King et al's J. J. Perkins 1, 450 out nwc lot 72, KWVFL sbdn and sw¼ S.P. Ry. 2, A-856, 1850-ft test.

Cooke County: Benson Bros.' R. M. Zipperer 1, 200 nsl 2000 wel Lot 14, Geo. Ivy sur A-516, 1400-ft test.

Jack County: J. M. Bloodworth's Fee 1, 700 fr swl 1694 fr sel M. Anderson sur. A-5, 600-ft test.

Wichita County: Akin-Dimock et al's H. Lalk 1, 200 nsl 1000 ewl blk 286, Waggoner Colony Lands, 2000-ft rotary test.

Young County: Paul B. Scott et al's T. T. Routan 1, 630 nsl 1050 ewl TE&L Co. sect 25, 800-ft rotary test.

Baber & Windfrey's Mrs. Kate Grigsby 1, 1050 snl 150 ewl TE&L Co. sec 415, 1000-ft rotary test.

TEXAS PANHANDLE

Wheeler County: Sinclair Prairie's J. B. Henderson 1, c nw nw H&GN Ry. 16, blk A-4, mim for 8500-ft Ellenburger test.

WYOMING

Fremont County: Sinclair Wyoming's Unit 1, ne ne 11-42n-107w, Du Bois, lcn.

WESTERN CANADA

South Alberta Plains—Grassy Lake: Imperial Oil's Grassy Lake 3, lsd 2 35-10-13w4th, dr.

Central Alberta Plains—Edgarton: Edgarton Oils No. 3, lsd 9 18-43-4w4th dr.

Hurry Up the Make-Up with UNIFORMLY ACCURATE THREADS

• As drilling for new wells gains momentum, you'll put a higher priority on the qualities of casing and tubing that speed make-up and running of strings.

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FOR SALE

■ FOR SALE: Two Johnson Steam Rigs, with three boilers to each rig, one 16 inch and one 18 inch pump with each rig, about 5,000 feet 4½ inch drill pipe with one rig and none with the other. All of the equipment in A-1 shape, boilers have just been re-flued on each rig 12 x 12 engine for both rigs. These rigs are capable of drilling 6,000 feet and are priced to sell. Also one 5½ inch draw-works unitized and used for power, together with a Lebus clutch, priced to sell. Get in touch with J. B. Daniel. Phone 122, Fairfield, Texas.

■ FOR SALE: Steam drilling rig capable of drilling 12,000-foot hole. Complete except drill pipe. Rolling stock consists of 1 1942 Chrysler Sedan, 1 1941 Chevrolet ½-ton pickup truck, 1 1941 International 1½-ton Stake Truck, 1 1942 Travelier Coach, 1 8-Wheel Weber flat bed trailer. For full list of equipment and price, address Fullerton Mfg. Co., Box 306, Fullerton, California.

■ FOR SALE: Complete rotary rig, Model K Cardwell, 2800 ft. 4½" Drill pipe. All in good condition. May be seen operating. Box 97, Clare, Michigan. Phone 772.

■ FOR SALE: Well drill machines, cable tools, bits, stems, jars, cable, bailers, blocks, elevators, engines, boilers, fishing tools. Write S. W. Pressey, Pueblo. Colo.

■ Double drum Wilson Master pulling machine with 50' telescoping H mast and rotary attachment, on 5-ton International with good 10.00 x 20 tires. Good as new and ready to work. Address: Bill Lynn, 724 West Main, Alice, Texas. Telephone 816J.

■ FOR SALE: 1 Wilson Super Spudder, complete with lines, mast, steel dog house, Kohler light plant, 5" and 6" tools and hand tools. 1 Ft. Worth Jumbo D. Spudder, complete with lines, mast, dog house, Kohler light plant, 5" to 12½" tools and hand tools. 1 Bridgeport, all steel deep well cable tool drilling unit, with 210 H. P. Waukesha drilling engine. The above listed equipment is in A-1 condition. Write O'Brien & Brown Drilling Co., Box 124, Salem, Illinois, or Phone Odin, Illinois, 117R4.

■ LUMBER FOR SALE: Oak, gum and fir timbers, Surveyor stakes. E. J. Gaiennie, Box 1074, Shreveport, La.

■ FOR SALE: Unitized Portable Rotary Drawworks. Capacity about 2500' with present (practically new) motor. Combination gas-gasoline carburetor. Five-speed transmission. Also, unitized 7¼ x 10 Gardner-Denver power mud-pump. Surge chamber. Unitized on heavy steel skids, to Climax Motor, V-belt drive. Now located at Wichtex Machinery Company yard, Wichita Falls Texas.

■ FOR SALE: Used "Welderz Frend" acetylene gas generators. I buy and recondition. W. B. Mackey, 6509 Hillsboro St., Houston, Texas. Phone W-7714.

FOR SALE
At Silica, Kansas, Warehouse

5 Lee C. Moore steel rig fronts with 11' band wheels.
5 Weber Type AB 13 x 14 roller bearing gas engines.
5 OCS Type FS Non-reversible clutches.
5 Large Happy Idlers.
5 Small Happy Idlers.
6 94' Ideco 330,000 lb. derricks, complete with guy wire and two sheave pumping crown blocks.
6000' 7" O.D. H-40 seamless casing, 24 lb. New.
2500' 7" O.D. Grade C seamless casing, 24 lb. Used.
2200' 6" transite Class 150 New.
200' 8" transite Class 150 New.
560' 10" Century untested.

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NOTICES

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■ FLORIDA-GEORGIA, low-priced royalties and drilling blocks, in areas extensively leased by majors. Address: Box 2191, Orlando, Florida.

■ 1000-acre West Central Texas block. Good geology, and subsurface information on shallow and deep wells. Excellent chance for real shallow production in 800 and 1300-foot sands. Well drilled to Ellenburger in 1918 showed for small producer, if acid had been known, chances are that would have made a good well. Will make deal for shallow or deep test. 109-A South 5th Street, Waco, Texas.

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Will buy outright, or on an over-ride or oil payment basis, proven acreage in Middle West, prefer Texas, Louisiana, Arkansas, Mississippi, Oklahoma or Illinois. Plan on $2,500,000 drilling program next 12 months. Send full particulars and deal expected to G. L. Reasor, 135 S. La Salle St., Chicago, Illinois.

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If you have a property that needs re-reconditioning, or if you have proven or semi-proven leases that need to be drilled on reasonable interest basis, we welcome your inquiries. We are an independent oil producing company, having a complete organization, finances and all necessary power equipment to drill, recondition and operate oil properties. References exchanged. Give full details first letter. All inquiries strictly confidential . . . Address reply to R. P. L. c/o The Oil Weekly, Houston, Texas.

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We have a most important lease block between producing fields, with excellent geology; Geological report and plats available for lease dealers, independents or individuals interested in leases in real oil development.

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SITUATIONS WANTED

■ Latin America: Married man, 39, with 14 years well rounded experience on earthmoving, construction and oil field transportation in Latin America, mostly in supervisory positions, desires employment. Draft exempt. Fluent Spanish. Know how to handle men. Excellent references. Available on short notice. Address: Box 62, c/o The Oil Weekly, Houston, Texas.

■ Geologist, single, 24 4F draft classification, desires position in South America, preferably doing surface work. Approximately one year of sub-surface experience in oil and over one year of surface experience on the Colorado Plateau. Fair knowledge of Spanish. Might consider position in States. Address: Box 70, c/o The Oil Weekly, Houston, Texas.

■ Geologist, discharged veteran, 38, married, with eleven years geological experience. Five years in South America and balance in Texas, Louisiana, Arkansas, Oklahoma. Also law graduate with four years leasing and title curing experience. Desires position suitable to training and experience. Address: Box 73, c/o The Oil Weekly, Houston, Texas.

SITUATIONS WANTED

■ COMPETENT landman and title attorney, age 38, desires permanent position with major company or active independent in Oklahoma. Address: Box 69 c/o The Oil Weekly, Houston, Texas.

■ CHIEF DIVISION CLERK, 18 years varied experience in banking, oil accounting, production and drilling, desires position with opportunity of advancement. Either foreign or domestic. Address: Box 71, c/o The Oil Weekly, Houston, Texas.

HELP WANTED

■ WANTED: Driller, experienced on Sullivan hydraulic core drill. Location, Rocky Mountains. Address: Box 35, c/o The Oil Weekly, Houston, Texas.

■ Wanted by a consulting geophysical organization. Petroleum Engineers with Hayward Mud-logging experience or its equivalent. Immediate openings in Venezuela. Excellent opportunity for advancement to managerial positions throughout the world. Address: Box 46, c/o The Oil Weekly, Houston, Texas.

■ Experienced seismograph Party Chiefs and Computers. Expanding company offering very good salaries, working conditions and prospects of advancement. Give full personal data, experience, references. Answers held strictly confidential. Address: Box 63, c/o The Oil Weekly, Houston, Texas.

■ Major oil company wishes to employ two geologists in Houston office for subsurface work in Texas-Louisiana Gulf Coast. Please state education, experience and salary expected in first letter. All inquiries confidential. Address: Box 64, c/o The Oil Weekly, Houston, Texas.

■ REFINERY—Wanted a young married man with knowledge and experience to design, build and operate a small refining plant. Right man can own an interest paying for same out of profits of the plant. Address: Box 72, c/o The Oil Weekly, Houston, Texas.

Wanted, by established oil well supply firm, an experienced oil well supply pricing clerk. Also experienced purchasing department clerk. Men preferred but will consider women if capable of taking dictation. State experience and salary now earning. Address: Box 61, c/o The Oil Weekly, Houston, Texas.

POSITIONS WANTED BY SERVICE MEN

■ In the interest of both employers and employes, **The Oil Weekly,** through its Overseas Pony Edition, which is sent free to 6,500 former oil men now in the services, has offered to run advertisements from those who will be seeking work once they are discharged. In some cases **The Oil Weekly** has a few more details but, generally speaking, direct correspondence would be advisable. Unless otherwise indicated it may be some time before the person named in the advertisement is available.

■ B.S. in Geology, Penn State; 22 years' experience as field and district geologist and independent consultant Wyoming and Texas. Awaiting release from Air Corps. Part-time work on retaining basis or steady position. Prefer Rocky Mt. area. Married, 1 child. Capt. P. L. "Skipper" Keller, Headquarters SAAF, Box 152, Smyrna, Tenn.

■ M.E. Degree (petroleum option) from Oklahoma A&M, 1943; 3 months' experience in production department of major company; extensive general construction and earth moving work with Army Engineers. Lt. Chas. W. Haas, Hq. A.G.F. (Engineering Section), APO No. 246, c/o Postmaster, San Francisco, Calif.

■ Engineering graduate University of Kansas in stratigraphy, micropaleontology, sedimentation and geophysical methods; 4 years' experience in Louisiana in oil production, maintenance, gas-lift and drilling operations, and administration; 2 years' research with Kansas Geological Survey. T/S Hugh F. Crain 37540096, Co. "B" 1875th Engr. Avw Bn., APO 218, c/o P.M., N.Y.C.

■ 6 months' experience with oil and supply company, correspondence courses in petroleum refinery operations and equipment prior induction. Prefer combination field and desk job; maintenance and operation of oil field equipment. Pfc. Ellis H. Austin, 1st Guard Co., Marine Barracks, N.O.B., Norfolk 11, Va.

SQUEAKS from the BULL WHEEL

Cold Facts

"There's nothing wrong with this Pacific island except it needs a better type of native and a decent water supply."

"Yeah, Soldier, but those are the only drawbacks to Hell, too."

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SPERRY-SUN WELL SURVEYING CO.
has openings for . . .

DIVISION MANAGER (Sales & Service) with executive and sales ability and practical experience in oil well surveying, instrument rentals and other technical services.

RESEARCH AND DEVELOPMENT ENGINEER. Graduate physicist or mechanical engineer capable of doing research and development work.

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INSTRUMENT REPAIR MEN with practical experience in repairing well surveying instruments.

Men with proper qualifications looking for permanent post-war jobs are invited to apply by letter addressed to the company at P. O. Box 8008, Houston 4, Texas, with a copy to 1608 Walnut Street, Philadelphia 3, Pennsylvania.

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New Shot Hole Drills For Sale
ROUSE
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HOUSTON, TEXAS

Love Set

"Whose game?" asked the late arrival at a tennis match.

The pretty thing in the next seat looked up at him hopefully. "I am."

Old Age Benefit

Johnny, the village moron, was paid a salary of $3 a week for oiling an old rusty cannon that stood in the courthouse square. For 11 years he attended to his duties faithfully. Then one day he appeared in the mayor's office and resigned. The mayor, amused and curious, asked him why.

"Because," answered Johnny, "in 11 years I've saved $2 a week and now I have enough money to buy a cannon and go in business for myself."

Heavenly Slide

"Can you help me select a gift for a wealthy old aunt who is so weak she can hardly walk?"

"Certainly, Madam. Third aisle on the left for floor wax."

Life Is So Simple

Notice to seamen: When you don't know what to do, govern yourself by these general rules:

1. If it moves, salute it.
2. If it doesn't move, pick it up.
3. If it's too large to move, paint it.

This Curious World

A Seabee's definition of a Seabee: A soldier in a sailor's uniform with Marine training doing a civilian job for WPA wages.

Said the old maid: "Don't put 'Miss' on my tombstone when I die, for I haven't missed as much as you think I have."

Newspaper classified ad: Wanted—A place to show her wares by an antique lady with a Spanish chest and other odd things.

Women will be as pleasing to men as whiskey when they learn to improve as much with age.

Recommended

Blonde: "Is he a nice boy?"

Another one: "No, dear, you'll like him."

Masculine Ego

Two salty sailors whistled at two pretty girls on the street.

"The nerve of them," observed one of the fair maidens. "Whistling at us two days before payday."

Time Marches On

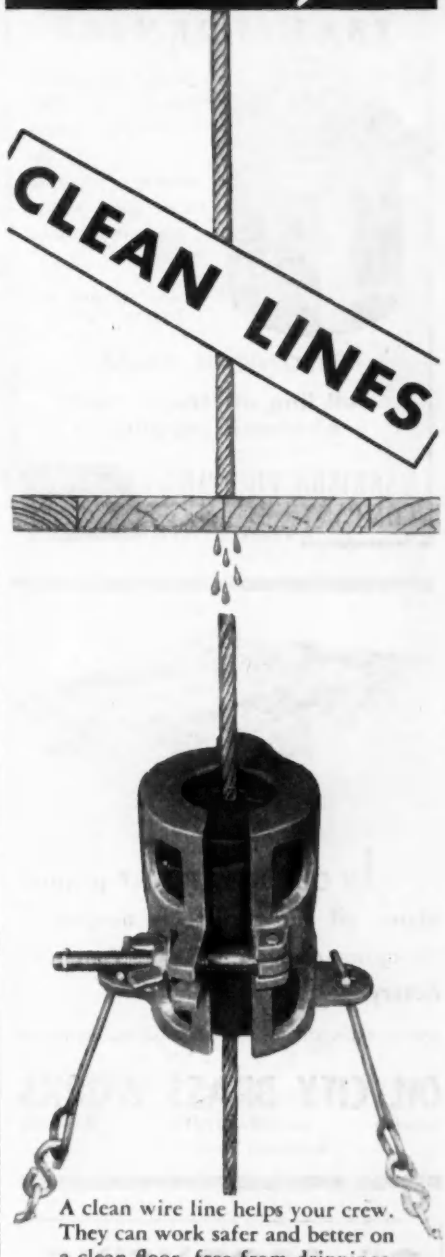
Said a WAVE of her life in the Navy: "I spend all my days saying 'Yes, Sir,' and all my evenings saying 'No, Sir.'"

Noet's Pook

Starkle, starkle, little twink,
Who the heck I are you think?
I'm not under the alfluence of incohol,
Although some thinkle peep I am.
I fool so feelish I don't know who is me.
The drunker I set here the longer I be.

"Best Bet Yet"

CLEAN LINES



A clean wire line helps your crew. They can work safer and better on a clean floor, free from drippings. With a Patterson-Ballagh Wire Line Wiper the line is stripped completely of mud and oil. A compact steel housing contains a spiral rubber which is inexpensive and easily replaced. The rubber wipes the line as it comes out of the hole. Sparkproof. Use one on every well. Now made of PBX, Patterson-Ballagh's new synthetic rubber.

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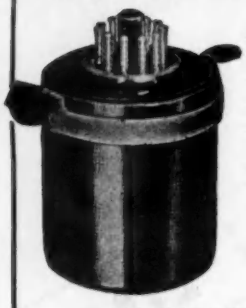

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* *Also available with terminal lugs.*

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MEN IN THE INDUSTRY NEWS

E. K. Hartzell has been named assistant to the president of Cities Service Gas Company with headquarters at Oklahoma City. He will direct the company's public and employes relations program, supervise publicity, advertising and personnel activities.

Arthur A. Johnson, Jr., has joined the industrial relations department of Shell Oil Company at Houston. He was formerly with Douglas Aircraft Company at Tulsa.

R. R. Porterfield, formerly in charge of Devonian Oil Company's West Texas division at Midland, will head the land and geological department moved by the company from Tulsa to Fort Worth. **D. R. Norling** and **J. S. Miller** have been transferred from the Tulsa office to Fort Worth. **George D. Foster** remains in charge of geology at Tulsa.

Hamilton Fish, former New York congressman, has entered the oil business in Oklahoma. Fish has acquired a 100-barrel oil producer in 9-8n-7e as well as a drilling block and 120 acres of leases in the Wewoka Lake area, all in Seminole County. Properties were assigned by the Gillock Corporation and the Chandler Hill Corporation.

J. C. Chatfield has resigned from Phillips Petroleum Company, Bartlesville, Oklahoma, to join a publication in New York City.

Jack Kessler has resigned from British-American Oil Producing Company to resume his former post as chief geologist for Ira Rinehart's at Tulsa.

Wallace W. Adams, former seismograph engineer with The Carter Oil Company, has recently been promoted to captain.

Theodore P. Higgins has returned to work for The Carter Oil Company in Tulsa after two years in the armed forces. He will be in the geophysics department.

John E. Ford, Jr., has been named executive assistant to the president of Houdry Process Corporation. Ford joined Houdry after eight years with M. W. Kellog Company. During 1941-1942 he was project engineer on the company's synthetic rubber plant at Sarnia, Ontario.

J. F. Campbell has been appointed chief development engineer and **R. W. Phillips,** laboratory director for The Weatherhead Company, with headquarters in Cleveland.

Campbell will conduct the Weatherhead development program, aided by **Ralph Erskine** of the development engineering staff, who was named assistant development engineer. Phillips will direct operation of the entire Weatherhead laboratory, assisted by **Robert Pae.**

Captain George Weinschel, Corsicana, Texas, has returned to the United States on temporary duty after serving with the 36th Division in Italy, France, and Germany. Before entering the Army, he was an independent operator with holdings in the Illinois

Ralph J. Schilthuis has resigned as assistant director of the production division, Petroleum Administration for War, and will return to Humble Oil & Refining Company at Houston.

Carlton H. Beal, senior petroleum engineer for Richfield Oil Corporation, has joined District 5 office of PAW as assistant director of production. He was five years with Tide Water Associated Oil Company in California before joining Richfield.

T. A. Pollard has resigned as petroleum engineer with the Petroleum Administration for War in Los Angeles to join Phillips Petroleum Company, with headquarters in Houston. He was with Standard Oil Company of Texas before joining PAW.

R. H. Fizzell, Jr., scout for Skelly Oil Company in West Texas with headquarters at Midland, has resigned to join the Merchant Marine.

First Lieut. Jack R. Wise, scout for Magnolia Petroleum Company prior to entering the Army in July, 1942, and a veteran of the European campaign, has rejoined the company's Houston scouting staff.

Steven J. Leach, associate petroleum engineer in Humble Oil & Refining Company's division office at Midland, Texas, has been advanced to district engineer at Wink. He has been succeeded at Midland by **Elmo L. Walling,** formerly at Humble headquarters in Houston.

H. M. Krause Jr., who has been district engineer at Wink, has been transferred to the Houston office.

C. W. Patterson has been appointed sales engineer for Detroit Diesel Engine Division, General Motors Corporation, and will make his headquarters in Tulsa. Patterson has been connected with Detroit Diesel's engineering department for several years and since 1942 has been a special service representative in the South Pacific. He was assigned to the Amphibian Engineers where his specific duties were to supervise maintenance of diesel engines in battle zones.

C. W. Patterson

Jack Tarner, former assistant professor of petroleum and natural gas engineering at The Pennsylvania State College, is now associated with Phillips Petroleum Company, as reservoir engineer, with headquarters in Oklahoma City.

E. A. Roberts, Jr., has become associated with Drilling and Exploration Company, Hobbs, New Mexico. He was formerly with Grayburg Oil Company, at Artesia, New Mexico.

C. R. Gallagher, former head of Permian Oil Corporation, which sold its West Texas producing properties to Stanolind Oil & Gas Company last October, is Texas manager of the Redfern Oil Company, a new entrant into the Permian Basin with headquarters in the Lubbock National Bank Building, Lubbock.

Don H. Krey has been appointed sales manager for Homestead Valve Manufacturing Company, Coraopolis, Pennsylvania, and **Elliott G. Johnson** has been named assistant sales manager.

Andrew H. Heywood has been appointed manager of the Motor Application Department of Westinghouse Electric Corporation, East Pittsburgh, Pennsylvania. Heywood joined Westinghouse in 1926 and in 1944 was appointed assistant manager of the department he will now head.

Harry L. Huntley has been appointed headquarters repair sales manager of the 34 plants of the Manufacturing and Repair Department of Westinghouse Electric Corporation, and will have his headquarters in Pittsburgh. He has been associated with Westinghouse since 1926.

Sherman Wildasin of R. H. Sheppard Company, Hanover, Pennsylvania, manufacturers of diesel engines, has opened an office at 1310 Hunt Building, Tulsa.

Michael Pallein has been named plant superintendent for Franks Manufacturing Company, Tulsa. He has been with the firm since 1933.

Warren D. Anderson, West Texas-New Mexico district geologist for the Amerada Petroleum Corporation since 1934, and an employe of the company since graduating from the South Dakota School of Mines with a degree in mining engineering in 1926, has resigned. He plans to remain active in the oil business, retaining his residence at Midland, Texas.

John L. Rich, professor of geology at the University of Cincinnati and consulting geologist, is in China as consultant to the China Natural Resources Commission, doing special work on exploration and development of petroleum and natural gas reserves.

W. O. Bates, Jr., vice president of Caterpillar Tractor Company, Peoria, Illinois, has moved to San Leandro, California, to become full-time manager of the Caterpillar offices and plant there. He was appointed San Leandro manager early this year, but has divided his time between the California plant and Caterpillar Military Engine Company, Decatur, Illinois, where he has served as vice president since 1942.

W. O. Bates, Jr.

Bates is a pioneer in the track-type tractor industry with which he has been affiliated almost continuously since he entered the employ of Bates Machine and Tractor Company in 1912.

T. D. Slingman has been appointed manager of industrial sales for Baldwin-Hill Company, Trenton, New Jersey, manufacturers of thermal insulation products. He was formerly vice president of mechanical sales for The Dayton Rubber Manufacturing Company, and had previously been associated with Fairbanks Morse Company, The Duriron Company, and Chicago Pneumatic Tool Company.

Malcolm B. Pate, Levi Sherrick and **George T. Self** have been discharged from the Army and have rejoined Shell Oil Company.

Deaths

W. V. Bowles, Houston independent oil operator, died July 17. Bowles, 59, entered the oil business at Spindletop. He was with The Texas Company for 18 years and was a production manager for that firm when he resigned in 1933 to form his own producing company.

George E. McGill, superintendent for Sunray Oil Corporation in Osage County, Oklahoma, died in Hominy, Oklahoma, July 14. McGill, 63, was a native of Pennsylvania. Before going to Oklahoma he worked in the fields of West Virginia and prior to his Sunray affiliation had been connected with the Guffey-Gillespie, Tide Water Associated and Darby oil companies.

A. D. Slater of Houston, oil engineer for the Petrolite Corporation, Ltd., died July 13. Slater, 35, recently returned from a field trip to South America.

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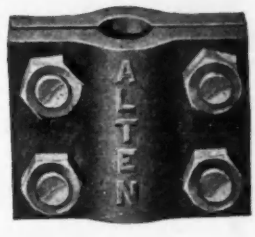

Fig. F-613

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War Production

The shifting production job that has faced the United States since our entry into the European War, and that will remain among the chief problems of industry until Japan is conquered can be more readily understood from a report, "War Production in 1944," recently published by the War Production Board, and available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 25 cents per copy.

The report points out that in 1944 it appeared that in large part we had licked the two great problems of materials and facilities, and might actually be embarrassed during the year by surpluses of some of these basic production resources. A number of military programs appeared to be stabilized or actually declining. The whole atmosphere changed sharply with the discovery that our penetration of Germany itself would be harder, and a more costly job in both men and material than had been expected. The year ended with an abrupt curtailment of all measures to resume or expand civilian production and with a continued and intensified dedication of all efforts to the production of the goods needed to bring the war to a successful conclusion.

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Pumping Equipment Manual

Kobe, Inc., Huntington Park, California, has published a new service manual as an aid to the operation of hydraulic oil pumping equipment.

The manual is divided into ten sections containing 37 pages of illustrated instructions. In addition, there are 16 plates of engineering drawings along with parts lists for ready reference.

The manual has been produced with an appreciation of the requirements for hard usage that a publication of this kind would be expected to withstand. The covers have been varnished to make them durable and the inside pages have been printed on serviceable paper.

The forward part of the manual is devoted to a description of various types and designs of triplex pumps. An explanation is given of the principles on which Kobe triplex operates in creating hydraulic oil pressure which in turn runs production units at the bottom of each well. Covered in this section are such items as specifications, capacities and check data. Directions are included for computing the volumetric efficiency and input horsepower and also the speed of the triplex. Tabulation tables show horsepower output under various conditions.

The second part of the book carries general operating instructions. Section heads include: installation and breaking in; daily, weekly, monthly and semi-annual service checks; minor or field repair operations; shop repair; and Triplex tools.

Engineering Literature

The Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin, announces a comprehensive directory of products and engineering literature describing the lines of equipment it manufactures.

Major portion of the directory is devoted to a listing of more than 1600 product types. New products added since the previous directory, such as induction and dielectric heating equipment, are indicated by a star for easy identification.

Engineering literature is arranged according to products discussed with new bulletins also starred. The bulletins offered in this section of the directory are written by engineers who are authorities in their respective fields. In most cases the literature contains operating data, charts, formulas, and technical information of value to the man who specifies and buys equipment.

A business reply card is included for use as a bulletin order blank.

1—Giant Cathead

American Iron and Machine Works Company, Oklahoma City, announces the giant size American simplomatic cathead for heavy-duty drilling. The new size is 30 percent larger than the

old, with all parts increased in proportion, and the stroke has been increased from 32 to 42 inches. Replacement parts are reduced to a minimum and the cathead operates on all draw-works regardless of catshaft speeds. A feature is freedom from destructive shocks and impacts due to the smooth operation of the cathead.

2—Magnetic Strainer

Winslow Engineering Company, Oakland, California, has developed an improved magnetic strainer which is said to incorporate features heretofore unavailable. The strainer combines the ef-

fect of powerful permanent magnets with fine screening to remove filings and metal particles from oil systems or other liquids, and the basic design is applicable to a great variety of liquid filtration problems.

Two cylindrical baskets consist of a main body of perforated steel, within which are fine wire mesh linings. The magnets are suspended within these baskets. Of either cast bronze or iron, the one-piece body incorporates the manifold, strainers, inlet and outlet connections, by-pass valves, pressure regulator, and main control valve. The quick-acting, hand-operated, three-way control valve, simplified so as to require no jacks to lock it in place, permits change of flow from one strainer element to the other, or through both simultaneously. A safety factor is the fact that flow is maintained through either or both strainers regardless of the position of the valve control lever. With flow directed through one basket, the other basket and magnet assembly can be removed for cleaning as one unit. If necessary, the magnet assembly easily can be detached from the basket for additional cleaning or inspection. Out-going pressure may be regulated by a valve adjacent to the three-way valve.

In addition to their use in the turbo-generator field, there are many other practical applications for this magnetic strainer, often in a more simplified form, in both industrial and marine fields. Among these are: Filtration of cutting oils used with machine tools; filtering oil used in large speed reducing or speed increasing gears; on run-in test-stands for gasoline, diesel or steam power units to remove filings and metal cuttings during initial tests.

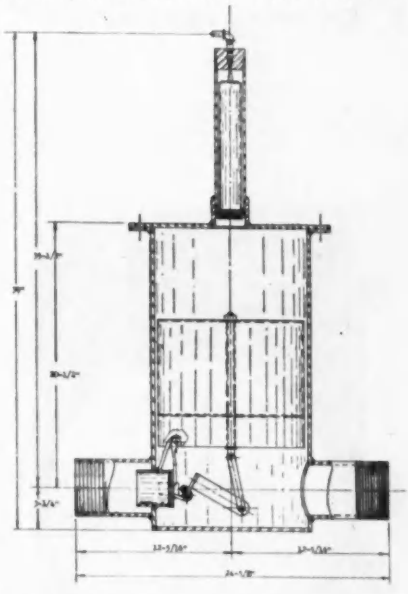
3—Electrode

Westinghouse Electric Corporation, Pittsburgh, Pennsylvania, has perfected an all-position a-c electrode said to be capable of producing highest quality weld metal and is particularly recommended for vertical and overhead work. The electrode meets the requirements of the U. S. Navy Department Bureau of Ships and the standards set for welding by various associations. The electrode includes an arc pacifier that prevents excessive spatter loss during the negative half cycles and an arc stabilizer to aid in reestablishing the arc after each current zero.

For best performance on vertical and overhead arc welding, a high-organic electrode coating is used.

4—Shutoff Valve

Richard D. Young, Sterling, Kansas, has perfected an automatic, self-starting shutoff valve for gravity gathering systems in oil fields. It is claimed the valve will keep air out of lines where clocked



stations are used and that it will avoid air locks in pumps and line.

The four-inch line size is made of 12-inch pipe, set vertical. It is 22 inches high, with flanged top and four-inch threaded ends to set in header back or check. It is claimed that one valve will handle all tanks in a battery. The outlet is 2½ inches. A 10 to 1 leverage on the clapper breaks the vacuum or seal from the fall or suction pump. After the clapper is cracked, there is no necessity for leverage, so the valve has a straight lift from a large float which contains over 800 cubic inches, and will support 22 pounds in 40 gravity oil. This is said to give a surplus of power which assures the valve starting every time. Also when the tanks are low, the float will lower and will choke the last of the oil out

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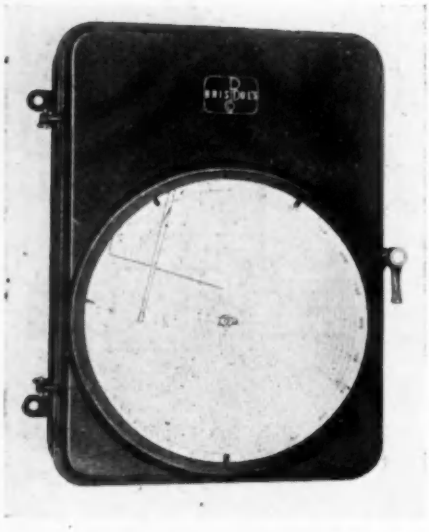
preventing whirl or funnel. The small bleeder on top is made of 2 x 10 inch, with seat for needle valve and ball check in the top. Both large and small floats are bottomless to avoid damage from pressure.

5—Recording Machine

The Bristol Company, sales promotion department, Waterbury, Connecticut, announces a new instrument for recording machine running-time, to check machine performance. The instrument records the operating "on" time of production machinery and other similar equipment. The chart gives the total "on" time in hours, minutes, and seconds for a given period. "Off" periods also are shown on the chart as well as the time at which they occurred.



The running-time readings are magnified in such a way that the total operating time of a machine can be determined easily and accurately to within a few seconds.

6—Transformer Welder

Air Reduction Sales Company, New York, New York, announces a 200-ampere Wilson "Bumblebee" transformer welder to meet the demand for a high-quality AC machine of medium capacity, incorporating the latest features for economy in power consumption and high speed.

Built-in capacitators insure maximum power economies, relieve overloaded transmission and plant feeder lines, making room for additional equipment. The unit is equipped with a disconnect switch.

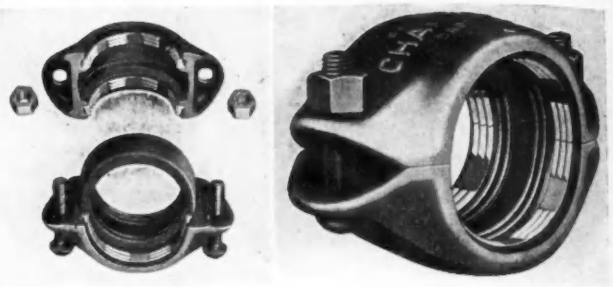
Self-contained, the unit has two ranges of current, the low from 30 to 110 amperes and the high from 90 to 275 amperes. Continuous stepless current control is provided throughout each current range by turning the crank on top of the machine. A full-view scale makes current settings easy to read.

All windings are covered with spun-glass fibre, heat-resistant, Class B non-inflammable insulation.

7—Pipe Coupling

The Champion Machine & Forging Company, Cleveland, has developed a drop forged pipe coupling for plain or beveled-end steel pipe and suitable for straight line, flexible joint, expansion joint and lock joint connections.

These couplings are suitable for a wide variety of applications such as transmission lines, gathering lines, water lines, air lines, low pressure steam lines, etc. They can be used as a pipe repair clamp for mending small leaks in lines.

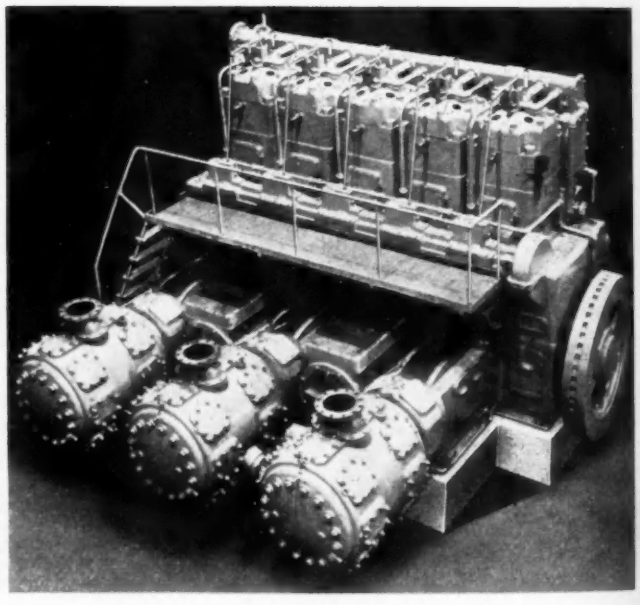


Expansion of pipe is provided for at every connection within the housing of the coupling. Expansion and contraction of pipe within the coupling housing takes place without affecting positive seal of the joint. The gripping rings or dies within the coupling housing bites into the surface of the pipe and effects a connection capable of withstanding end-pull of approximately 49,000 pounds on four-inch pipe. Arrangement of the dies in the housing is such that expansion or contraction of the pipe does not affect their gripping power as the groove in which they are installed provides for their adjustment with the movement of the pipe. An especially designed resilient ring gasket fits inside the housing and provides a double seal on both sides of the pipe joint. The coupling consists of five parts: two housing sections, two bolts with nuts and one gasket. No special tools are required to install the couplings and no grooving or shop work of the pipe is required. They are available for pipe sizes 2, 2½, 3, 4 and 6 inches.

8—Engine and Compressor

Clark Brothers Company, Olean, New York, has introduced a gas engine driven compressor for pipe line stations, and other installations, listed as the Clark "BA" Model 17.

In general the appearance of this model is somewhat similar to the Clark RA line is that the "Angle" design is used. A common crankcase mounts the 17 x 17-inch power cylinders vertically and the compressor and scavenging cylinders horizontally; two scavenging pumps supply the scavenging air on each of the three BA models, BA-5, BA-6 and BA-8.



In the angle design each crankpin carries a power-end connecting rod and either a scavenging- or compressor-end connecting rod. The complete line is as follows: BA-5, 1000 brake horsepower, 5 power cylinders, 2 scavenging pumps and 3 compressor cylinders; BA-6, 1200 brake horsepower, 6 power cylinders, 2 scavenging pumps, 4 compressor cylinders; BA-8, 1600 brake horsepower, 8 power cylinders, 2 scavenging pumps and 4 compressor cylinders.

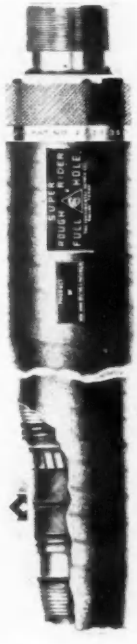
The angle design, rectangular-shaped power cylinders and built-in manifolds give the engines a clean and compact appearance. Accessible from a platform over the compressor crossheads are the injection valve gear and starting air pilots. The exhaust and cooling water manifolds are located on the side away from the compressor cylinders. A compact operating position is located on the flywheel-end away from the compressor cylinders.

The following features are claimed for the compressor: Maximum compactness for a compressor in this size range; low foundation requirements resulting from balance in design; easy installation due

to the angle design and construction; low "down time" due to the durability and ruggedness of construction; accessibility for necessary repairs, maintenance and adjustment; long bearing life resulting from the use of individual connecting rods for power and compressor pistons; long ring life; two cycle operation which gives low fuel consumption, conservative rating, a reserve of power, and a minimum of valves, valve gear and machinery; efficient cooling because of the improved high velocity water jacketing, dry-joint water cooled cylinder heads and exhaust manifold; and a complete line of compressor cylinders available, lined and unlined of cast iron, cast or forged steel, for all pressures and services.

9—Rotary Drilling Hose

New York Belting & Packing Company, New York City, has announced an improvement in its rotary drilling hose which is distributed through The Continental Supply Company, Continental Building, Dallas.



The improvement is accomplished by means of a new technique of wire application. It involves a special machine which applies the main pressure resisting wire plies individually in such manner that the tension on each wire is automatically controlled for uniformity and equalization.

It is claimed that this method of uniform placement of wires at a scientifically determined angle contributes to a substantial increase in the strength of the hose and also in its flexibility. Laboratory tests have demonstrated that this improved hose is more flexible and withstands greater working stresses than the old-style hose, and the tests have been supported by extensive field experience.

This improved construction is now being applied to hose for high pressure drilling and also hose for medium pressures. It is also used in hose equipped with full-hole type of built-in couplings.

Literature

10—Rotary Drilling Units

Franks Manufacturing Corporation, Tulsa, announces bulletins which give complete information on improved models of skid-type rotary drilling units. The bulletins are the first of a series which the company is preparing covering its line of new and improved drilling and servicing equipment. In book form, the bulletins feature photographs, descriptions, capacities and specifications of each unit.

Use the Coupon

For free copies of Manufacturers' Literature or more information on products described on these pages, use the convenient mailing coupon on page 93.

11—Lathes

South Bend Lathe Works, South Bend, Indiana, has released Catalog 9-G which illustrates and describes the company's line of nine-inch engine lathes and toolroom lathes, and also the nine-inch precision turret lathes.

12—Fabric Bearings

Gatke Corporation, Chicago, Illinois, has issued a 68-page booklet on moulded fabric bearings, describing these products and listing applications for unusual service conditions.

13—Packings

Greene, Tweed & Company, New York, has published Bulletin P-3 on packings. The guide contains condensed descriptions of each grade of Palmetto packing and gives the leading features and purposes with identifying illustrations.

14—Temperature Exchanger

The Bird-White Company, Chicago, has published Bulletin 12 describing the new Temperature Exchanger. In addition, patented features and the advantages of these units as after-coolers, purifying and external heating units is fully described.

Engineering drawings showing multiple unit installations for air or gas lines are also presented.

15—Pumps

Worthington Pump and Machinery Corporation, Harrison, New Jersey, has released three new bulletins.

W-487-B11 describes steam-jacketed rotary pumps for melted materials or highly viscous liquids requiring preheating.

RP-269, Part 1, is a reprint from *Power Magazine*, on steam-jet thermocompressors. Part 2 continues the discussion of Part 1.

WP-1099-B43 discusses industrial application of high pressure hydraulic nozzles.

16—Wire Rope

MacWhyte Company, Kenosha, Wisconsin, has published two catalogs.

G-15 contains 176 pages of data on wire rope, completely tab indexed.

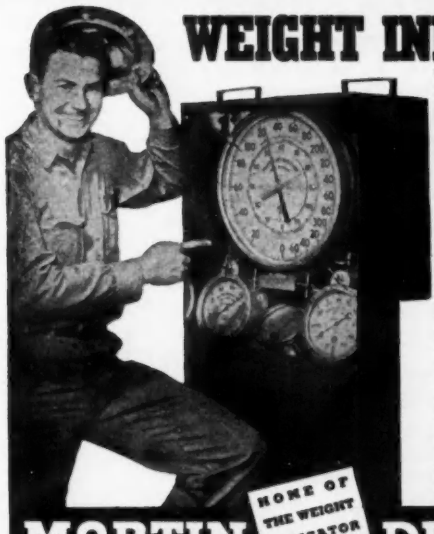
S-7 covers specifications, listings, safe load tables on many types, sizes and combinations of slings made of wire rope.

17—Centrifugal Pumps

Barnes Manufacturing Company, Mansfield, Ohio, has published a booklet which covers the line of Barnes automatic centrifugal pumps. The booklet illustrates each type and design of pump and gives full details on construction capacities, and application.

18—Electrodes

Air Reduction, New York, New York, has issued an electrode catalog which contains a combined electrode selector chart and index, illustrated sections on mechanical properties and testing, and on approvals. The book is printed in two colors and the arrangement is calculated to make it easy to use.



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Personnel Advancements Made by Oil Well Supply

Oil Well Supply Company, United States Steel subsidiary, Dallas, has named Paul H. Shepherd, formerly assistant division manager at Fort Worth, as assistant Midwest division manager with supervision of the Coastal area comprising South Texas, Southwest Texas, Gulf Coast, South Louisiana and Mississippi areas. His headquarters will be at Houston.

Paul H. Shepherd

Howell P. Fogle, formerly district manager in the Southwest Texas district, San Antonio, has been appointed division tubular representative with hearquarters at Houston. His position in San Antonio has been filled by W. P. Clements, Jr., until recently representing Oil Well Supply in Western Canada.

Don L. Collins, formerly manager of machinery sales in Oklahoma City, becomes manager of machinery sales for the Midwest Division of Oil Well Supply Company. His headquarters will be at Houston.

Carl C. Egner, formerly assistant division manager at Houston, has been named manager of pipe line equipment sales, a unit of the General Sales Department, Dallas.

D. O. Smith, formerly district engineer of Oil Well Supply at Evansville, Indiana, has been appointed Training Section supervisor of the General Sales Department, Dallas.

Pomona Honored

Pomona Pump Works of Fairbanks, Morse & Company, Pomona, California, has been awarded the Distinguished Service to Safety Award, the highest recognition afforded by the National Safety Council. The award was made on June 15, and covered operations for 1944 during which time only 28 time-lost accidents were reported, showing only 223 man days lost.

Hunt Office Opened

Hunt Tool Company, Houston, has established a New York office under the name of the Hunt Export Company, with headquarters at 19 Rector Street, Room 2503, New York 6.

Advertisers' Index

EDITORIAL INDEX, PAGE 33

* Indicates detailed information on products and services included in 1943-44 edition of Composite Catalog of Oil Field and Pipe-Line Equipment.

*Alten's Foundry & Machine Works 91
American Cyanamid & Chemical Corp. 24
*American Iron & Machine Works Co. 80
*American Roller Bearing Co. 77
*American Sand-Banum Co. 96
*American Steel & Wire Co. 29
Baird Manufacturing Co. 86
*Baker Oil Tools, Inc. 75
*Baldwin-Duckworth Division Chain Belt Co. 30
*Baroid Sales Division National Lead Co. 19
Wm. M. Barret, Inc. 96
*Cameron Iron Works, Inc. 1
*Chain Belt Co. 30
*Clark Bros. Co. ..... Insert, 8-9
*Climax Engineering Co. 59
Columbia Steel Co. 29
The Continental Supply Co. ..... Insert, 32-33
*Diamond Chain & Manufacturing Co. 6
*Dresser Industries, Inc. ..... —
*E. I. du Pont de Nemours & Co. 31
The Eagle-Picher Lead Co. 78
Equitable Equipment Co. 84
*Fairbanks, Morse & Co. 79
*Fluid Packed Pump Co. 25
Ft. Worth Laboratories 86
The Gates Rubber Co. 9
Gatoura & Stramler 86
*General Electric Co. 51
*Grant Oil Tool Co. 17
*Gray Tool Co. 22
Grove Regulator Co. 11
*The Guiberson Corp. 67
*Leland Hamner 53
Harrison Equipment Co. 90
Houston Laboratories 86
*Hughes Tool Co. ..... I Cover
*Hunt Tool Co. 56
*Hydril Co. 27
The International Nickel Co. 26
Jarecki Manufacturing Co. 83
*Jensen Brothers Manufacturing Co. 92
*Jones & Laughlin Steel Corp. 54
Jones & Laughlin Supply Co. 64
*Kerotest Manufacturing Co. 71
*Lamtex Equipment Corp. 53
*Lane-Wells Company 15
*Martin-Decker Corp. 95
*McCullough Tool Co. 12-13
*Mission Manufacturing Co. 73
*Lee C. Moore & Co. 2-3
Murphy Diesel Co. 81
*National Lead Co. 19
*New York Belting & Packing Co. 20-21
Tom Niland Equipment Co. 53
*W. C. Norris Manufacturer, Inc. 34
North American Geophysical Co. 91
*Oil City Brass Works 90
Oil Industry Mailing List Co. 86
*The Parkersburg Rig & Reel Co. ..... III Cover
*Patterson-Ballagh Corp. ..... 4 and 89
*Pelican Well Tool & Supply Co. 76
*Penberthy Injector Co. 52
*Quaker Rubber Corp. 82
*Reda Pump Co. 18
Republic Steel Corp. 87
Rodgers Hydraulic, Inc. 28
*Roller Bearing Company of America 10
Rouse Exploration Drilling Co. 89
Shell Development Co. 8
Sinclair Refining Co. 14
*Sperry-Sun Well Surveying Co. 89
Texas Foundries 5
Trading Post Section 88
Treasury Department 32
United States Steel Corp. ..... II Cover and 33
*Universal Atlas Cement Co. ..... II Cover
*Universal Oil Tool Co. 7
Van der Horst Corporation of America 23
*Worthington Pump & Machinery Corp. 14
Wyatt Metal & Boiler Works ..... IV Cover

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TRADING POST SECTION

ON PAGE 88 OF THIS ISSUE